DOCUMENT RESUME

ED 221 690 CE 033 760

AUTHOR	Clanton, Kaye Reames
TITLE	Health Occupations Education--A Curriculum Guide.
INSTITUTION	University of Central Arkansas, Conway.
SPONS AGENCY	Arkansas State Dept. of Education, Little Rock. Div. of Vocational, Technical and Adult Education.
PUB DATE	30 Jun 82
NOTE	1,348p.; For a related document, see CE 033 759. Not available in paper copy due to colored paper.
EDRS PRICE	MF11 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	Abbreviations; Allied Health Occupations; *Allied Health Occupations Education; *Anatomy; Career Planning; Competency Based Education; Dental Health; Diseases; First Aid; Health Facilities; Health Needs; Health Occupations; Health Services; *Human Body; Human Relations; *Job Skills; *Medical Services; Medical Vocabulary; Metric System; Nutrition; *Physiology; Recordkeeping; Safety; Secondary Education
IDENTIFIERS	Emergency Medical Services

ABSTRACT

Developed to provide curriculum materials that secondary Health Occupations Education (HOE) teachers/coordinators can use in organizing their individual programs, this curriculum guide contains performance-based units covering the majority of a four-semester program of study in HOE. The following topics are covered: medical ethics, law, and history; health issues; health care facilities; health careers; career decisions; organization and general plan of the body; first aid; human relations; medical terminology and abbreviations; anatomy and physiology (the integumentary, skeletal and muscular, digestive, circulatory, respiratory, nervous, urinary, reproductive, and endocrine systems); nutrition/ dental health; microbes and diseases; metrics for health occupations; safety and emergency care; recordkeeping; and health care procedures. Included in each unit are most or all of the following components: performance objectives, suggested activities, information sheets, assignment sheets, job sheets, transparency masters, unit tests, and answers to the unit tests. The units are planned for more than one classroom period of instruction. (MN)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED221690

HEALTH OCCUPATIONS EDUCATION

- A CURRICULUM GUIDE -

BY

KAYE REAMES CLANTON
Project Coordinator

Conducted By

Center for Vocational Education
University of Central Arkansas
Conway, AR 72032
(501) 329-2931
Dr. Vincent J. Feck, Project Director

In Cooperation With

Arkansas Vocational and Technical Education
A Division of the Department of Education
Capitol Mall West
Little Rock, AR 72201

A Vocational Exemplary Project
Funded Under the Provisions of
P.L. 94-482, Subpart 3, Section 132
Don Harlan, Supervisor
June 30, 1982

CE 033 760

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)
☐ This document has been reproduced as received from the person or organization originating it
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS
MATERIAL HAS BEEN GRANTED BY
J D Nichols
TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)."

Cover Design By

A. Ferrel James
University of Central Arkansas
Conway, AR 72032

For information regarding this material or for additional copies of the Health Occupations Education - A Curriculum Guide, write to:

Arkansas Vocational and Technical Education
A Division of the Department of Education
Exemplary Programs
Capitol Mall West
Little Rock, AR 72201

Materials contained in this publication may be reproduced without the permission of the Center for Vocational Education. Source credit is requested, but not required. Permission is required only to reproduce any copyrighted materials contained herein.

Discrimination Prohibited: No person in the United States shall, on the grounds of race, color or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal Financial assistance.

ACKNOWLEDGMENTS

Special thanks are due the members of the Health Occupations Education Curriculum Advisory Committee:

Ms. June Garner
Nursing Development Coordinator
Baptist Medical Center

Mr. Fritz Friedl
Vocational Director
Pulaski County Special Schools

Mr. Bill Langford
Administrator
Conway Memorial Hospital

Ms. Wyonne Swafford
Assistant Supervisor
Exemplary Projects
Arkansas Department of Education

Mr. Lloyd Greenwell
Supervisor
Health Occupations Education
Arkansas Department of Education

Mr. Robert Robinette, Director
Section of Environmental Services
and Health Maintenance
Arkansas Department of Health

Ms. Estelene Duke
HOE Coordinator
Conway Area Career Center

Ms. Geraldine Simpson
HOE Coordinator
Brinkley High School

Ms. Charlotte Yates
HOE Coordinator
Hall High School

Ms. Marilyn Williams
HOE Coordinator
Stuttgart High School

Ms. Jobelle Johnston
HOE Coordinator
Jonesboro Area Vo-Tech High School

Ms. Jane George
Employment Coordinator
Baptist Medical Center

Mr. Fred Robinson
Vocational Director
Warren Area High School

Ms. Mary Orr
Kelly Health Care Services

Mr. Don Harlan
Supervisor
Exemplary Projects
Arkansas Department of Education

Marian Q. Ross, MA,OTR/L, FAOTA
Chairman and Associate Professor
Department of Occupational Therapy
University of Central Arkansas

Ms. Martha Markland
Formerly with Baptist Medical Center

Ms. Marie Vinsant
HOE Coordinator
Metropolitan Vo-Tech Ed Cent.

Ms. Linda Henderson
HOE Coordinator
Central High School

Ms. Martha Cobb
HOE Coordinator
Wilbur D. Mills High School

Ms. Linda Kittler
HOE Coordinator
Pine Bluff High School

Appreciation is expressed to Carl Garrison and Lanny Noggle of the Central Duplicating Division of the University of Central Arkansas for printing of Health Occupations Education - A Curriculum Guide.

Appreciation is expressed to Lloyd M. Greenwell, State Supervisor of Health Occupations Education, Dr. Joseph Arn, Associate Professor, Vocational Teacher Education, University of Central Arkansas, and Dr. Arvil Burks, Professor and Chairman, Department of Health Education, University of Central Arkansas, who shared their time and expertise in developing this curriculum guide.

A special thank you goes to Delphene Turner, Sandy Qualls and Nancy Langford who spent countless hours typing the guide.

Kaye R. Clanton

Kaye R. Clanton
Coordinator
Health Occupations Education
Curriculum Project

TABLE OF CONTENTS

Page

Introduction vii

Goals and Objectives x

Format for Health Occupations Education - A Curriculum Guide . xi

Unit I Medical Ethics, Law and History I-1

Unit II Health Issues II-1

Unit III Health Care Facilities III-1

Unit IV Health Careers IV-1

Unit V Career Decisions V-1

Unit VI Organization and General Plan of the Body VI-1

Unit VII First Aid VII-1

Unit VIII Human Relations VIII-1

Unit IX Medical Terminology and Abbreviations IX-1

Unit X Anatomy and Physiology

- A - The Integumentary System X-A-1
- B - The Skeletal and Muscular System X-B-1
- C - The Digestive System X-C-1
- D - The Circulatory System X-D-1
- E - The Respiratory System X-E-1
- F - The Nervous System and Special Senses X-F-1
- G - The Urinary System X-G-1
- H - The Reproductive System X-H-1
- I - Endocrine System X-I-1

Unit XI Nutrition/Dental Health XI-1

Unit XII Microbes and Diseases XII-1

Unit XIII Metrics for Health Occupations XIII-1

Unit XIV Safety and Emergency Care XIV-1

Unit XV Record Keeping .... (To be developed)

Unit XVI Health Care Procedures XVI-1

7

INTRODUCTION

Health Occupations Education - A Curriculum Guide has been developed to provide curriculum materials that secondary Health Occupations Education teacher/coordinators can use in organizing their individual programs. We are optimistic that the use of this guide will assure program unity and set minimum standards for Health Occupations Education in Arkansas.

The guide contains performance-based curriculum units covering the majority of a four semester program of study in Health Occupations Education. The first semester (Exploratory) contains the units dealing with orientation to the health field and exploring health careers. First Aid (Red Cross Multimedia) skills are taught as well as basic information about body design. The semester culminates with the students assessing whether or not a health career is suitable for them. A student could drop out of the Health Occupations Education program at this point if interest in the health field had subsided.

The second and third semesters contain the Core Curriculum units - those common to all health careers. The unit on Human Relations is given major emphasis in the Core Curriculum section. The areas of human relations and communications seem to be where problems arise with workers in the health field. Unit XVI (Health Care Procedures) contains basic health care procedures which can be removed from that section and inserted in the portion of the Core Curriculum section where the instructor prefers to teach each procedure. As a reference, however, these procedures have been indexed to show the unit where each procedure best relates.

Unfortunately, time did not permit actual development of the units in the fourth semester, but a basic design for this section was formulated. The fourth semester (Clinical Experience) will use a flexible approach consisting of group and individualized techniques. The first portion of the semester will deal with an expansion of previously introduced topics or introduction of new in-depth material presented to the class as a group. Preparation for post-secondary education and for working on a job will be included. Individualized packets will contain those unique areas (tasks and knowledge) that apply only to a particular health career. The individualized materials are not a printed part of this guide, but can be obtained from the New Jersey Department of Education (Health Occupations Clinical Rotations and Learning Packets) by Patricia Perrine. Vocational - Technical Curriculum Laboratory, Rutgers - The State University, Building 41303 - Kilmer Campus, New Brunswick, New Jersey 08903).

The following listing illustrates the four-semester division of the secondary Health Occupations Education Curriculum plan and guide:

Exploratory Section - First Semester

Unit I .... Medical Ethics, Law, and History
Unit II .... Health Issues
Unit III .... Health Care Facilities and Agencies
Unit IV .... Health Careers
Unit V .... Career Decisions
Unit VI .... Organization and General Plan of the Body
Unit VII .... First Aid

Core Curriculum Section - Second and Third Semesters

Unit VIII .... Human Relations
Unit IX .... Medical Terminology and Abbreviations
Unit X .... Anatomy and Physiology
  A - The Integumentary System
  B - The Skeletal and Muscular Systems
  C - The Digestive System
  D - The Circulatory System
  E - The Respiratory System
  F - The Nervous System and Special Senses
  G - The Urinary System
  H - The Reproductive System
  I - Endocrine System
Unit XI .... Nutrition/Dental Health
Unit XII .... Microbes and Diseases
Unit XIII .... Metrics for Health Occupations
Unit XIV .... Safety and Emergency Care
Unit XV .... Record Keeping
Unit XVI .... Health Care Procedures

Clinical Experience Section - Fourth Semester

Post Secondary Education Preparation
Job Preparation
Lab - Coop - Shadow experience in areas of interest using individual packets (from Health Occupations Clinical Rotations and Learning Packets - State of New Jersey)

1. Nursing
2. Pediatrics
3. Medical Laboratory
4. Radiology
5. Electrocardiography and Electroencephalography
6. Respiratory Therapy
7. Dental Cluster
8. Office Cluster
9. Dietary Cluster
10. Physical Therapy
11. Occupational Therapy
12. Special Senses

GOALS OF GUIDE

This Curriculum Guide is designed to:

- Provide the setting for students to explore a broad range of health occupations so that more informed career choices can be made.

- Help students prepare for entry level employment in the health field by developing specific job entry technical skills, interpersonal skills, and job success skills.

- Provide the opportunity for students to acquire basic knowledge and skills in preparation for post-secondary education and training programs in the health field.

GENERAL OBJECTIVES OF GUIDE

Upon successful completion of this course of study, the student should be able to:

- Determine whether a health occupation is suitable as a career.

- Explain the interrelationships and the opportunities for careers in health occupations.

- Acquire informed consumer health care choices that can be demonstrated to others.

- Perform duties that demonstrate entry level job skills for a representative sample of positions in the health field.

- Demonstrate job success skills.

- Demonstrate an understanding of and application of interpersonal skills.

- Be motivated to continue their education in their selected health field.

- Acquire basic knowledge and skills applicable to post-secondary education and training programs in the health field.

FORMAT FOR HEALTH OCCUPATIONS EDUCATION
- A CURRICULUM GUIDE -

The format used with the guide was developed by the Mid-America Vocational Curriculum Consortium.

USE OF THE INSTRUCTIONAL UNITS

The H.O.E. instructional units cover certain instructional areas in the classroom program. Each instructional unit includes most or all of the basic components of a unit of instruction; performance objectives, suggested activities, information sheets, assignment sheets, job sheets, transparency masters, unit tests, and answers to the unit tests. Units are planned for more than one classroom period of instruction.

Careful study of each instructional unit will enable the teacher to determine:

A. The amount of material that can be covered in each class period

B. The skills that must be demonstrated

C. The supplies and equipment needed for skill performance

D. The amount of classroom time needed for teacher demonstration and student practice

E. Supplementary materials that may be ordered

F. Any resource personnel who must be contacted

The specific components of an instructional unit perform the following functions.

OBJECTIVES

Each unit of instruction is based on performance objectives. These objectives specify the exact behaviors the student will be exhibiting, thus providing students with a sense of direction.

Performance objectives are stated in two forms. The unit objectives state the materials to be covered in the unit of instruction and how the student will handle the material. Specific objectives state the types of performance the student will be doing to satisfy the unit objective.

A classroom discussion should follow immediately after the students read the objectives so that any questions concerning the performances expected of the student can be answered.

SUGGESTED ACTIVITIES

Each unit of instruction has a suggested activities sheet outlining steps to follow in accomplishing specific objectives.

Instructor. Duties of the instructor will vary from unit to unit, but the following are minimum activities for the instructor:

1. Provide students with objectives, information, assignment and/or job sheets
2. Discuss objectives and information sheets
3. Make transparencies
4. Demonstrate procedures outlined on job sheets (when included)
5. Give test

Any additional instructional activities and teaching methods to aid students in accomplishing the objectives are strongly encouraged.

Student. Student activities are listed to help the student achieve the objectives of the unit.

INFORMATION SHEET

Information sheets provide content essential for meeting the cognitive requirements of the unit. These sheets provide an excellent guide for presenting necessary knowledges necessary to develop the skills specified in the unit objective.

Students should read the information sheets before the information is discussed in class. Students are encouraged to make any additional notes on the information sheets to help them in their learning process.

TRANSPARENCY MASTER

Transparency masters provide information in a special way. Transparencies may present new information or they may reinforce information presented in the information sheets. They are particularly effective when identification is necessary.

Make the transparencies from the masters and place them in your notebook ready for immediate use.

Copies of transparency masters can be made and used as student handouts to supplement the material contained in the information sheet.

JOB SHEET

Job sheets are an integral part of each unit of instruction. The instructor should be able to demonstrate the skills outlined in the job sheets. Procedures specified in the job sheets give direction to the skill being taught and allow both student and teacher to check student progress in performing the skill. Job sheets provide a ready outline to students and furnish to potential employers a picture of the types of skills being taught.

ASSIGNMENT SHEET

Assignment sheets give direction to study and furnish activities which provide application of the knowledges contained in the information sheet. These may be given to the student for completion in class or used for homework assignments. Answer sheets are provided for checking student progress.

UNIT TEST

Unit test questions have been constructed to measure student achievement of each specific objective listed on the objectives sheet. Individual test items may be pulled out and used as a short test to determine student achievement of a particular objective. This kind of testing may be used as a daily quiz and will help the teacher spot difficulties being encountered by students in their efforts to accomplish the terminal objective.

ANSWERS TO UNIT TEST

Test answers are provided for each unit. These may be used by the teacher and/or student for checking student achievement of the objectives.

PERSONALIZING AND LOCALIZING INSTRUCTIONAL UNITS

Carefully review the instructional units before using the unit in the classroom. In reviewing the units, you may find it necessary to localize and personalize the units based upon the needs of your students.

Some of the ways of supplementing units are the use of audio-visuals, attention-getters, field trips, resource personnel, games and simulations, case studies, peer teaching, role-playing and personal experiences of both the teacher and students.

Various methods may be used in localizing a unit of instruction. You may wish to apply units of instruction to the local community, add additional materials from newspapers and magazines, invite local resource people and arrange for field trips.

In personalizing a unit of instruction, you may want to make the course content relevant to home and/or work situations. You may wish to involve students in the planning of the unit by using their own personal experiences. Having students involved in the teaching of some of the materials is sometimes an effective example of peer teaching.

Remember that as an instructor, you may wish to add any objectives to the units of instruction based on the individual needs of the student. If this procedure is followed, you must add the corresponding information in the information sheet, add any assignment or job sheets as deemed necessary and construct a corresponding unit test item.

PAGE NUMBERING SYSTEM

Each unit in the guide is assigned a numeral: I (Medical Ethics, Law and History); VIII (Human Relations). Pages are numbered consecutively within each unit. If a page is available as a transparency master, TM appears at the bottom of the page.

The following key will help to easily identify each section by color:

White - Objectives, Transparency Masters, and Suggested Activities

Green - Information Sheets

Goldenrod - Assignment Sheets

Blue - Job Sheets

Yellow - Test

Pink - Answers to Assignment Sheets, and Answers to Test

MEDICAL ETHICS, LAW AND HISTORY
UNIT I

UNIT OBJECTIVE

After completing this unit, the student will be able to demonstrate knowledge of basic health-care history, define ethics, identify ethical guidelines and rights of the patient, and be aware of legal implications of health careers. The student will also be able to demonstrate an understanding of the importance of ethics in the role of the health-related worker. This knowledge will be evidenced by satisfactory completion of a unit test.

SPECIFIC OBJECTIVES

After completing this unit, the student will be able to:

1. Identify among given statements concerning the history of health care those that are true and those that are false.
2. Define ethics.
3. Name two codes of ethics.
4. List the general ethical guidelines for Health Occupations students.
5. Discuss the confidentiality of information.
6. Explain the limitations on technical information given to the public.
7. List the ethical guidelines to be followed at work.
8. Explain three rights due to patients as individuals.
9. Describe "The Patient's Bill of Rights" established by the American Hospital Association.
10. Demonstrate an understanding of ethical behavior in health service situations.
11. Define physical law, moral law, common law, and statutory law.

MEDICAL ETHICS
UNIT I

SUGGESTED ACTIVITIES

I. Suggested activities for the instructor:

A. Provide students with objective sheet.

B. Discuss unit and specific objectives.

C. Provide students with information sheet.

D. Discuss information sheet.

E. Provide information for students to use in completing assignment sheets.

F. Have students prepare oral and/or written reports on individuals who have made outstanding contributions to health, relating their personal characteristics, education, and accomplishments.

- Drs. Banting and Best
- Charles Chamberlain
- Marie Curie
- Lena F. Edwards
- Alexander Fleming
- Hippocrates
- Edward Jenner
- Sister Kenny
- Joseph Lister
- Florence Nightingale
- Louis Pasteur
- Anton VanLeeuwenholk
- Jane Cooke Wright Jones (cancer/chemotherapy)
- Percy Julian (drug for treatment of glaucoma-physotigmine)

G. Have students find the "Code of Ethics" for a specific health field as Medical Technologist, Dental Hygienist, Physical Therapist, etc. List five principles the code mentions.

H. Involve students in role-play depicting ethical and unethical behavior.

1. While you are labeling urine specimens, the phone interrupts you and you forget which specimen belongs to a given patient.
2. Everyone else in the office is busy when the patient needs medication. You are not trained to give medication.
3. The patient refuses to eat lunch of ham and sweet potatoes because religion forbids the eating of ham.
4. Your mother's best friend is a patient at the clinic where you work as a nurse's aide. Your mother asks about the friend's diagnosis.
5. Your mother's friend asks you what you think of the treatment the doctor has prescribed.

I. Ask students to develop a code of ethics that would apply to any health care worker.

J. Invite a local lawyer to discuss legal implications in the health field.

K. Lead class discussion on health care situations that might result in litigation and how each could have been better handled. Obtain practice acts for dental and other allied health fields to assist in this activity.

L. Divide class into small groups and ask each group to develop a list of patients' rights.

M. Invite a pharmacist to discuss the importance of drug control and related precautions used in hospitals, pharmacies, and nursing.

N. Have students bring in articles from newspaper dealing with the legality of health professions.

II. Instructional Materials:

A. Objective sheet.

B. Information sheet.

C. Assignment sheets.

1. Assignment Sheet #1
   Hippocratic Oath
2. Assignment Sheet #2
   Nightingale Pledge
3. Assignment Sheet #3
   "The Patient's Bill of Rights"

4. Assignment Sheet #4
   Code of Ethics for the Licensed Practical Nurse and The International Code of Nursing Ethics
5. Assignment Sheet #5
   Ethics Dramatization

D. Answers to assignment sheets.

E. Test.

F. Answers to test.

III. Unit references:

A. Hicks, Dorothy J., et al., Patient Care Techniques. Indianapolis: The Bobbs-Merrill Company, Inc., 1975.

B. Lee, Ruth, Orientations to Health Services. Indianapolis: The Bobbs-Merrill Company, Inc., 1978.

C. French, Ruth M., The Dynamics of Health Care. New York, New York: McGraw-Hill Book Company, 1974.

IV. Additional resources:

Bulletin: Principles of Medical Ethics of the American Medical Association. American Medical Association, 535 North Dearborn Street, Chicago, IL, 1949.

Weston, Alan J., Survey of Allied Health Professions. Houston: College-Hill Press, 1980.

Smith, Voncile M. and Bass, Thelma A., Communication for Health Professionals. Philadelphia: J.B. Lippincott Co., 1979.

Wood, Lucile A., Nursing Skills for Allied Health Services, Volume I. Philadelphia: W.B. Saunders Co.

Films available from:

The Arkansas Department of Health
Division of Public Health Education
4815 West Markham Street
Little Rock, AR 72201

A 113 "The Patient is a Person"
I 106 "Leadership Issues - Theoretical & Pragmatic"
I 107 "Malpractice"

MEDICAL ETHICS
UNIT I

INFORMATION SHEET

I. Basic history of health care:

   A. Ancient Times - Techniques primitive, but health care was established as an ethical profession as such by Hippocrates, a Greek physician, around 400 B.C.

   B. Dark Ages - (500-1500 A.D.); little advance, but some genuises, such as Leonardo da Vinci and Galen did outstanding work, especially on anatomy.

   C. Modern Health Care - Did not really begin until mid-1800s. Since then growth and development has been fantastic.

II. Definition of ethics:

   A. Ethics is the study of right and wrong, based on moral law. It is a system of moral principles or standards governing conduct. It centers around respect for the needs and rights of other people. Ethics provides guidelines for acceptable behavior. Ethical behavior is a goal to be achieved requiring constant effort.

   B. All professions have a "Code of Ethics" or well defined rules and standards governing the conduct of the members.

III. Medical code of ethics:

   A. Hippocrates, a Greek physician of the fourth and fifth centuries B.C., wrote one of the first medical codes of ethics, the Hippocratic Oath. This oath is still used by some medical schools at graduation exercises

   B. The "Nightingale Pledge" was formulated by a committee of the Farrand School of Nursing, Harper Hospital, Detroit, Michigan. This is an oath, pledged by nurses upon capping or graduation, that states the ethical standards of their profession.

INFORMATION SHEET

IV. General ethical guidelines for Health Occupations Education students.

  A. In caring for the sick, students will help preserve life, ease the suffering of patients, and work toward restoring health to all patients.

  B. Maintain good moral character, by being loyal to employer, to patients, and to co-workers.

  C. Practice sound health habits in order to maintain personal health and to be able to carry out duties.

  D. Give care on the same level to all patients, showing no difference regardless of race or religious belief.

  E. Cooperate with other workers, carry out duties responsibly.

  F. Do not discuss confidential information given by a patient, never discuss diagnoses except with the patient's doctor or nurse.

  G. Never perform a procedure or give a treatment that you are not qualified to perform.

  H. Do not discuss your own problems or personal affairs with patients.

V. Confidentiality of information:

  A. Information about patients.

    1. The personal records of the patient, which include history, physical examination, medical or dental procedures, etc., must be treated with strictest confidence. If any such information must be discussed with other personnel in the office or hospital, such discussion should take place in private, not in the elevator, hall, or coffee shop, where it might be overheard.
    2. A safe rule to follow in discussing patients is to tell only the information you read in the newspaper.

  B. Information about personnel.

    1. Never repeat any information about anyone at work outside the office or hospital.
    2. Personal information about employees must be treated with complete confidentiality.

INFORMATION SHEET

VI. Limitations on technical information given to the public:

A. Health Occupations Education students are thought to know more about health because of their work and training. People frequently ask questions about health problems and rely on the answers given by Health Occupations Education students.

B. Students must answer such questions with greatest care. Most often they should suggest the patient ask the doctor. Students should be constantly aware of their limitations in such instances.

VII. Ethical guidelines to be followed at work:

A. Be accurate in following directions and in reporting. Report any error or accident to your superior at once.

B. Take proper care of equipment and supplies. Not only is medical equipment expensive, it is inconvenient and inefficient if it is not in working order at all times. Do not steal office or hospital supplies or equipment.

C. Treat co-workers with respect and courtesy. Everyone is important to the smooth operation of the health care facility. Every person and every task deserves respect.

D. Complete assigned tasks. Ask questions to be sure you understand an assignment before you start it. Consult your supervisor when help is needed or when you are unsure of what to do.

E. Do not grant a patient's request that is not mentioned on the chart without checking with the supervisor.

F. Perform only those tasks that you have learned. Do only those things that you have been trained to do. Do not perform a procedure or give a treatment you are not qualified to perform.

G. Accept no money or expensive gifts from patients.

H. Respect the privacy of patients and their families.

I. Know the health care facility's rule and policies and observe them exactly.

INFORMATION SHEET

J. Do not discuss your own problems and personal affairs with the patients. Avoid inappropriate, flippant, or unbecoming behavior.

K. Treat all patients with compassion, kindness, and respect. Help patients to maintain their dignity and confidence.

L. Respect the religious beliefs of patients.

VIII. Terms and definitions:

A. Assault - either a threat or an attempt to injure another in an illegal manner.

B. Battery - unlawful touching of another person without his/her consent, with or without resultant injury. Assault and battery are often charged together because of successful attempt to injure.

C. Civil law - pertain to legal relationship between private individuals.

D. Common law - term given to unwritten law, customs with authority of law, or precedents established by judges and juries in past cases.

E. Consent - permission granted by a person voluntarily and in his/her right mind. Written consent is safer because it is easier to prove.

F. Crime - an act that is forbidden or the ommission of duty that is commanded by a public law and that makes the offender liable to punishment by that law.

G. Criminal law - defines legal obligations between the individual citizen and the state; distinguished from civil law, which defines legal relationships between private individuals.

H. Duty of care - the obiligation under law for a nurse or other health worker to perform services for a patient which meet the common standards of practice expected in his/her community for a comparable worker.

INFORMATION SHEET

I. Ethics - the discipline dealing with what is good and bad, and with moral duty and obligations. A professional person is characterized by adherence to technical and ethical standards of a profession.

J. False imprisionment - holding or detaining a person against his/her will.

K. Felony - a term used for serious crimes, ones for which the penalty is imprisonment in the state prison for more than one year, and possibly the death penalty.

L. Invasion of privacy - a civil wrong that unlawfully makes public knowledge of any private or personal information without the consent of the wronged person.

M. Libel - a civil wrong; to communicate in writing defamatory matter about an individual or group to a third party.

N. Licensure - authorization by the state to practice one's profession or vocation. Involves control of educational standards,licensing examinations, and prohibitations for individuals who are not licensed.

O. Litigation - another term for law suit.

P. Malpractice - literally "bad practice," it has come to mean professional care that has led to injury, due to faulty practice or neglect.

Q. Misdemeanor - a term used for crimes less serious than felonies; they are punishable by imprisonment in the county jail for a term of less than one year.

R. Negligence - failure to perform in a reasonably prudent manner.

S. Privileged communication - any personal or private information which is relevant to his/her care, given by a patient to medical personnel.

T. Reasonable care - (Refer to definition for duty of care) the health worker is protected by law if it can be determined that he/she acted reasonably as compared with fellow workers; the patient is protected by recognition of the health worker's responsibility for duty of care.

INFORMATION SHEET

U. Slander - spoken statement of false charges or misrepresentations which defame or damage another's reputation as distinguished from libel, which is written.

V. Statutory law - that law which has been enacted by a legislative branch of the government.

W. Tort - a civil wrong; it may also be a crime.

X. Will - a written document legally executed by which a person makes disposition of his property to take effect after his death.

Y. Breach - breaking (infraction) of law, or of any obligation, tie or contract.

Z. Complex - not simple; complicated.

AA. Conduct - one's actions in general, behavior.

BB. Custom - long established practice; an accepted behavior.

CC. Dependent - having to rely on another person for help or support.

DD. Employee - one who is hired for a specific job or type of work.

EE. Ethics - a code of conduct for a particular group representing ideal behavior.

FF. Employer - one who hires another for a specific job or type of work.

GG. Expire - to cease; to die.

HH. Hygiene - rules designed for the promotion of health; sanitary science.

II. Hypothetical - for the purpose of reasoning; fictitious with a logical purpose.

JJ. Ideal - a standard of perfection or excellence

KK. Overt - open; not hidden.

INFORMATION SHEET

LL. Solvent - solution which dissolves a substance, converting it to a liquid.

MM. Status - position of affairs of a person.

NN. Unethical - not ethical; not representative of ideal behavior.

OO. Utilization - to make use of.

IX. The law and the health worker:

As a new worker in the health field it is important for you to become aware of the problems which may occur when you care for patients. The purpose of this instructional unit is to provide you with information that will assist you in identifying and preventing medical-legal problems.

It may be disturbing to realize that although you and your classmates are here to learn specific techniques and procedures used in caring for patients, there is a need for concern about the threat of medical-legal problems which could arise in your daily work.

A health worker may be defined as anyone who comes in contact with the patient, to serve him/her and to have access to his/her records. As a consequence, the patient must place great trust in the health worker. Violation of the patient's trust and confidence by the health worker may be interpreted as an illegal or immoral act.

Before presenting information relating to the health worker and the law, a brief look is required at the types of law which are encountered in everyday living. This will serve as a foundation for the more specific instructions to follow.

The word "law" may be used in different ways. For example, there are physical laws, such as the law of gravity; moral laws, such as the law of Moses; common law (unwritten law), based on custom and precedent, which constitutes the foundation of our country's legal system; and statutory or legislative laws which are written laws passed by the legislative branch of government, both federal and state.

INFORMATION SHEET

Item 1: Protective Laws

When a patient places himself/herself in our hands, he/she expects us to protect his/her life and all his/her human rights under the law. You can see how great our responsibility is to him/her. The law tries to protect the patient and the health worker as well by setting up standards and licensure for medical care.

The concept of basic human rights has slowly developed and is now widely accepted throughout the country.

We may think of this as a Bill of Rights for Patients. Certain basic rights are assured. It sometimes happens, however, that to give good health care these rights must be limited. For example, a patient's basic right of freedom is interfered with to provide him/her with medically indicated bed-rest. If bed-rest is needed, there must be a patient's consent as well as a doctor's order for the health worker to follow. Patients usually sign a general admission agreement when entering a health agency for treatment. If the patient does not voluntarily agree to sign the consent, the doctor and the health agency could be guilty of false imprisonment.

We must be doubly careful in any patient care situation which involves detaining or restraining a patient. For example, protective restraints are often used to remind a patient to hold his/her arm still while he/she is receiving intravenous fluids. Protective restraints may be used to restrain an elderly, irritating patient. In such a case, "protective restraints" may be questionable. Are they used to protect the patient or to prevent annoyance to the health care team? However, some patients must be restrained to protect themselves and others. This is often true with confused, disoriented patients. In such cases, be sure your judgment is correct and that you have the proper authorization to restrain.

There may be additional ways of violating a patient's rights, e.g., assault and battery. "Assault" is the handling of a patient with the threat to do harm or to restrain him forcibly. An example of a threat could be, "If you don't stay in your room, we'll put you in restraints."

As an extension of the verbal threat, there may be actual illegal bodily contact without the patient's consent; in this case the action is called "battery". An example of this situation occurs in Emergency Rooms when patients are brought in by the Police Department to have blood drawn for testing on a drunk driving charge. The procedure cannot be carried out without the patient's consent, unless he/she has been arrested, charged, and taken into police custody. When someone breaks the law the status of his/her basic rights change.

It is important that you understand from the foregoing paragraphs that there is protection for all. The patient is not to be coerced and the health worker must be carrying out valid orders.

Gossiping about a patient is another important area in which you must be extremely careful of the patient's rights. Gossip may be considered "defamation of character." A carelessly spoken word can be judged "defamation by slander." A written entry in a patient's chart such as "patient was a cranky old so-and-so today," is considered written defamation and is called "libel." It can be delcared an illegal act.

As you care for patients, you will often be entrusted with personal information, especially relating to their condition. This is called "privileged communication," and must be held in ansolute confidence. You have heard about privileged communication in the context of clergymen, lawyers, doctors, news reporters, etc. Now you, too, will have this responsibility.

The last in our list of abuses of a patient's rights is the "invasion of privacy," as a person in a specified location, or with certain information. An example of this could be a press photographer bursting into the patient's room following admission after a spectacular car wreck in which all other persons involved were killed. It is your responsibility as a health worker to protect your patient from this.

It is often difficult to analyze the patient's basic rights in light of prescribed medical services. In the next section we will consider the quality of care the patient receives and what the law says about it. However, before moving to the next section, you should be able to define and give an example of the following terms: standards and licensing laws, Bill of Rights, right of freedom, false imprisonment, assault, battery, slander, libel, privileged communication, and invasion of privacy. If you cannot define these terms, re-read this section. If you can, then proceed with the next sections.

INFORMATION SHEET

Item 2: Legal Judgements

Many a judge has been faced with the dilemma of ascertaining that the patient is guaranteed safe care while the conscientious health worker is protected from lawsuits. The patient is legally entitled to good care; he pays for it and expects it. The law supports the patient and makes the health worker responsible for "duty of care." On the other hand, the health worker is protected by the concept of "reasonable care." This is a standard which states that the level of care must be equal to the care given by a comparable worker in similar circumstances. If the health worker does not meet this standard of reasonable care and if harm therefore comes to the patient, the worker may ultimately be judged negligent. Negligency may be failure to give reasonable care or giving unreasonable care.

The terms "negligence" and "malpractice" are sometimes hard to distinguish. For most purposes, the term malpractice has come to mean professional care which is below the standard expected by the community. In other words, mal=bad, or faulty practice.

To clarify these terms, let's look at the following examples: When a nurse failed to give a prescribed medicine or treatment, negligence was involved because he/she overlooked it or perhaps ran out of time on his/her shift. Malpractice, on the other hand, would be giving the wrong medication or treatment to the patient.

It is customary to hold the person with the highest level of training and licensure responsible for the consequences of what he/she does or neglects to do. The registered nurse is responsible for the care of patients on her/his assigned list, even though other workers, such as the NA or LPN (LVN) perform some of the duties. She/he is the one utlimately held responsible. This is not meant to indicate, however, that persons of lesser training or licensure would not be held responsible for their own actions. It simply means that the person of the highest level of education and licensure is the final person to be held responsible - often it may be the physician. This concept deals with the chain of command; i.e., the person to whom one is directly responsible for one's actions.

Before leaving the subject of negligence and the possibility of being sued by a patient (commonly called a lawsuit or litigation), let us consider the seriousness with which a lawsuit may be treated by the court.

INFORMATION SHEET

If the degree of injury to the patient is slight and the intention of the health worker was not to harm, the law may be able to keep the entire litigation between the patient and the health worker instead of going to court. In this case the accusation is called a "tort", is treated under civil law, and is known as a civil suit. On the other hand, if it is shown that the health worker intended to injure the patient, the case is removed from settlement by civil law and becomes a criminal suit. The defendant has not only injured a person (patient) but has committed an unlawful act against society.

It is understandable that the more serious the crime, the more severe the punishment. Serious crimes are called felonies, while lesser crimes are called misdemeanors. Both types are handled under the criminal law procedures.

The section on legal judgments is now complete. You have received information on many complex concepts. Before moving on to the next section, be sure you can give a definition and example of each of the following terms: duty of care, reasonable care, negligence, malpractice, lawsuit, litigation, tort, civil law, criminal law, felony, and misdemeanor. If you know these terms, continue with the next section.

Item 3: Legal Documents

As a health worker, you may handle or be responsible for certain documents, records, and legal papers. Three important documents you will handle are the patient's chart, the written consents, and his/her will. When the term "legal document" is used, it indicates that it is acceptable in courts of law as evidence of truth, the real thing; it is above reproach, and is subject to the scrutiny and standards of any legal person.

Let us examine a patient's chart in these terms. Is it complete? Is it signed? Is it in ink and in no way altered? These are questions asked when determining whether it is an acceptable legal document.

INFORMATION SHEET

In other words, if the health worker were to appear in court, the lawyer showing an entry in the patient's chart would be expected to ask, "Is this your signature? What did you mean by what you said here?" Later in this course you will learn to chart your nursing care on the patient's chart. With the knowledge you have gained from this unit, you will be more aware of how important it is to chart legibly, accurately, and according to prescribed charting rules.

Another very important legal record is the "signed consent." In court action, the lawyer can be expected to ask any or all of the following questions:

> "Is there a consent form available for use in this instance?"
>
> "Was the patient competent to sign?" (He/she was not disoriented, confused, etc.)
>
> "If the patient was not competent to sign, is the signature on the consent that of the legally authorized person?"
>
> "Did the patient consent to what was done, or can this consent be otherwise interpreted?"
>
> "Was the consent signed before the treatment was given?"

Without proper consents signed by the patient, we can be accused of illegal acts (there are certain agency rules about who may witness consents.)

Another important document is the will. You may be asked to witness a patient's signature when he/she signs a will. According to law, a will must be signed in ink, signed voluntarily by the patient while in sound mind, and witnessed by at least two persons over the age of 21.

The health worker may be required to witness a signature on a will. Follow the agency procedure. Many agencies designate one individual who may be permitted to sign as a witness to a signature on a will.

Perhaps you can think of ways in which you might prevent becoming involved in a lawsuit? If you responded with comments along the following lines, you are to be commended for your understanding of your legal responsibilities for your patient's care:

INFORMATION SHEET

> "I will be a conscientious worker because the patient is my responsibility, no matter how I feel or how distracted I am."
>
> "I will be observant of the patient's rights and avoid any violation of them."
>
> "I will be careful with the **paperwork** for which I will be responsible. I will do all in my power to see that all documents are legally correct."
>
> "I understand what is meant by chain-of-command. In the future I will do only those things for which I have been trained and supervised to do."

You should have a good idea of the law as it relates to you while performing your job of caring for patients. Hopefully you are now aware of how important it is to do your best. Always be mindful that in your work in the health field, you are entrusted with the care of another person, and this is the most precious trust in life.

MEDICAL ETHICS
UNIT I

ASSIGNMENT SHEET #1--HIPPOCRATIC OATH

Directions: Read the Hippocratic Oath below and write a brief summary. Prepare for class discussion.

HIPPOCRATIC OATH

"I swear by Apollo the physician, and Aescalapius, and Hygeia, and Panacea, and all the gods and goddesses, that according to my ability and judgment, I will keep this oath and its stipulation--to reckon him who taught me this art equally dear to me as my parents, to share my substance with him, and to relieve his necessities if required; to look upon his offspring in the same footing as my own brothers, and to teach them this art if they shall wish to learn it, and every other mode of instruction, I will impart a knowledge of the art to my own sons, and those of my teachers, and to disciples bound by a stipulation and oath according to the law of medicine, but to none other."

"I will follow that system of regimen which, according to my ability and judgment, I consider for the benefit of my patients, and abstain from whatever is deleterious and mischievous. I will give no deadly medicine to anyone if asked, nor suggest any such counsel; and in like manner I will not give to a woman a pessary to produce abortion. With purity and with holiness I will pass my life and practice my art. I will not cut persons laboring under the stone, but will leave this to be done by men who are practitioners of this work. Into whatever houses I enter, I will go into them for the benefit of the sick, and I will abstain from every voluntary act of mischief and corruption; and, further, from the seduction of females or males, of freeman and slaves. Whatever, in connection with my professional practice, or not in connection with it, I see or hear, in the life of men, which ought not to be spoken of abroad, I will not divulge, as reckoning that all such should be kept."

"While I continue to keep this Oath unviolated, may it be granted to me to enjoy life and the practice of this art, respected by all men, in all times. But should I trespass and violate this Oath, may the reverse be my lot."

MEDICAL ETHICS
UNIT I

ASSIGNMENT SHEET #2--THE NIGHTINGALE PLEDGE

Directions: Read the Nightingale Pledge below and write a brief summary. Prepare for class discussion.

THE NIGHTINGALE PLEDGE

"I solemnly pledge myself before God and in the presence of this assembly to pass my life in purity and to practice my profession faithfully. I will abstain from whatever is deleterious and mischievous, and will not take or knowingly administer any harmful drug. I will do all in my power to maintain and elevate the standard of my profession, and will hold in confidence all personal matters committed to my keeping and all family affairs coming to my knowledge in the practice of my calling. With loyalty will I endeavor to aide the physician in his work, and devote myself to the welfare of those committed to my care."

MEDICAL ETHICS
UNIT 1

ASSIGNMENT SHEET #3--A PATIENT'S BILL OF RIGHTS

Directions: Read the Patient's Bill of Rights below and write a brief summary. Prepare for class discussion.

The American Hospital Association Board of Trustee's Committee on Health Care for the Disadvantaged, which has been a consistent advocate on behalf of consumers of health care services, developed the Statement on a Patient's Bill of Rights, which was approved by the AHA House of Delegates February 6, 1973. The statement was published in several forms, one of which was the S74 leaflet in the Association's S series. The S74 leaflet is now superseded by this reprinting of the statement.

The American Hospital Association presents a Patient's Bill of Rights with the expectation that observance of these rights will contribute to more effective patient care and greater satisfaction for the patient, his physician, and the hospital organization. Further, the Association presents these rights in the expectation that they will be supported by the hospital on behalf of its patients, as an integral part of the healing process. It is recognized that a personal relationship between the physician and the patient is essential for the provision of proper medical care. The traditional physician-patient relationship takes on a new dimension when care is rendered with an organizational structure. Legal precedent has established that the institution itself also has a responsibility to the patient. It is in recognition of these factors that these rights are affirmed.

(1) The patient has the right to considerate and respectful care.

(2) The patient has the right to obtain from his physician complete current information concerning his diagnosis, treatment, and prognosis in terms the patient can be reasonably expected to understand. When it is not medically advisable to give such information to the

patient, the information should be made available to an appropriate person in his behalf. He has the right to know, by name, the physician responsible for coordinating his care.

(3) The patient has the right to receive from his physician information necessary to give informed consent prior to the start of any procedure and/or treatment. Except in emergencies, such information for informed consent should include but not necessarily be limited to the specific procedure and/or treatment, the medically significant risks involved, and the probable duration of incapacitation. Where medically significant alternatives for care or treatment exist, or when the patient requests information concerning medical alternatives, the patient has the right to such information. The patient also has the right to know the name of the person responsible for the procedures and/or treatment.

(4) The patient has the right to refuse treatment to the extent permitted by law and to be informed of the medical consequences of his action.

(5) The patient has the right to every consideration of his privacy concerning his own medical care program. Case discussion, consultation, examination, and treatment are confidential and should be conducted discreetly. Those not directly involved in his care must have the permission of the patient to be present.

(6) The patient has the right to expect that all communications and records pertaining to his care should be treated as confidential.

(7) The patient has the right to expect that within its capacity a hospital must make reasonable response to the request of a patient for services. The hospital must provide evaluation, service, and/or referral as indicated by the urgency of the case. When medically permissible, a patient may be transferred to another facility only after he has received complete information and explanation concerning the needs for and alternatives to such a transfer. The institution to which the patient is to be transferred must first have accepted the patient for transfer.

(8) The patient has the right to obtain information as to any relationship of his hospital to other health care and educational institutions insofar as his care is concerned. The patient has the right to obtain information as to the existence of any professional relationships among individuals, by name, who are treating him.

(9) The patient has the right to be advised if the hospital proposes to engage in or perform human experimentation affecting his care or treatment. The patient has the right to refuse to participate in such research projects.

(10) The patient has the right to expect reasonable continuity of care. He has the right to know in advance what appointment times and physicians are available and where. The patient has the right to expect that the hospital will provide a mechanism whereby he is informed by his physician of the patient's continuing health care requirements following discharge.

(11) The patient has the right to examine and receive an explanation of his bill regardless of source of payment.

(12) The patient has the right to know what hospital rules and regulations apply to his conduct as a patient.

No catalog of rights can guarantee for the patient the kind of treatment he has a right to expect. A hopsital has many functions to perform, including the prevention and treatment of disease, the education of both health professionals and patients, and the conduct of clinical research. All these activities must be conducted with an overriding concern for the patient, and, above all, the recognition of his dignity as a human being. Success in achieving this recognition assures success in the defense of the rights of the patient.

Reprinted with the permission of the American Hospital Association, copyright 1975. 840 North Lake Shore Drive, Chicago, Illinois 60611.

MEDICAL ETHICS
UNIT I

ASSIGNMENT SHEET #4
CODE OF ETHICS FOR THE LICENSED PRACTICAL NURSE
AND
THE INTERNATIONAL CODE OF NURSING ETHICS

Read the International Code of Nursing Ethics and the Code of Ethics for the Licensed Practical Nurse. When you have completed these two codes, complete the following questions.

1. Ethics is a code of ______________________ that represents ____________________ behavior for a particular __________.

2. A violation of ethical behavior may result in discipline by ____.

3. A violation of a legal requirement might result in discipline by ____.

CODE OF ETHICS FOR THE LICENSED PRACTICAL NURSE

Adopted by the National Federation of
Licensed Practical Nurses

The Licensed Practical Nurse shall:

1. Practice her profession with integrity.
2. Be loyal to the physician, to the patient, and to her employer.
3. Strive to know her limitations and to stay within the bounds of these limitations.
4. Be sincere in the performance of her duties and generous in rendering service.
5. Consider no duty too menial if it contributes to the welfare and comfort of her patient.
6. Accept only that monetary compensation which is provided for in the contract under which she is employed, and she does not solicit gifts.
7. Hold in confidence all information entrusted to her.

8. Be a good citizen.

9. Participate in and share responsibility of meeting health needs.

10. Faithfully carry out the orders of the physician or registered nurse under whom she serves.

11. Refrain from entering into conversation with the patient about personal experiences, personal problems, and personal ailments.

12. Abstain from administering self-medications, and in event of personal illness, take only those medications prescribed by a licensed physician.

13. Respect the dignity of the uniform by never wearing it in a public place.

14. Respect the religious beliefs of all patients.

15. Abide by the Golden Rule in her daily relationship with people in all walks of life.

16. Be a member of The National Federation of Licensed Practical Nurses, Inc., and the state and local membership associations.

17. Not identify herself with advertising, sales, or promotion of commercial products or service.

THE INTERNATIONAL CODE OF NURSING ETHICS

Adopted by the Grand Council of Nurses of the ICN at
Sao Paulo, Brazil, on July 19, 1953

1. The fundamental responsibility of the nurse is threefold: to conserve life, to alleviate suffering, and to promote health.

2. The nurse must maintain at all times the highest standards of nursing care and of professional conduct.

3. The nurse must not only be well prepared to practice but must maintain her knowledge and skill at a consistently high level.

4. The religious beliefs of a patient must be respected.

5. Nurses hold in confidence all personal information entrusted to them.

6. A nurse recognizes not only the responsibilities but the limitations of her or his professional functions; recommends or gives medical treatment without medical orders only in emergencies and reports such action to a physician at the earliest possible moment.

7. The nurse is under an obligation to carry out the physician's orders intelligently and loyally and to refuse to participate in unethical procedures.

8. The nurse sustains confidence in the physician and other members of the health team; incompetence or unethical conduct of associates should be exposed but only to the proper authority.

9. A nurse is entitled to just remuneration and accepts only such compensation as the contract, actual or implied, provides.

10. Nurses do not permit their names to be used in connection with the advertisement of products or with any other form of self advertisement.

11. The nurse cooperates with and maintains harmonious relationships with members of other professions and with her or his colleagues.

12. The nurse in private life adheres to standards of personal ethics which reflects credit upon the profession.

13. In personal conduct nurses should not knowingly disregard the accepted patterns of behavior of the community in which they live and work.

14. A nurse should participate and share responsibility with other citizens and other health professions in promoting efforts to meet the health needs of the public - local, state national, and international.

MEDICAL ETHICS
UNIT I

ASSIGNMENT SHEET #5 - ETHICS DRAMATIZION

Read this dramatization and then take part in presenting it to the class.

React to the situations listed at the conclusion of the dramatization.

MISS JOHNSON, Instructor We're happy to have the nursing students from the Community College join our hospital orientation session for new employees. Technically, the students are not employees of our Hospital, but they do have their clinical assignments here, and are therefore part of the hospital team. Our topic for discussion today is Introduction to Ethics in the Healing Arts.

MISS SMITH, V.N. Student Miss Johnson, what does "Ethics" mean?

MISS JOHNSON It comes from a Greek word that means "custom". There are many definitions we could use, but let's try this one: "Ethics is a code of behavior that represents the IDEAL conduct for a particular group."

MISS McGUIRE, V.N. Student II Well, I expect to become a Licensed Vocational Nurse (LPN), so will my ethical conduct be different from yours as a Registed Nurse?

MISS JOHNSON Each profession or vocation requiring a license in the health occupations has a written Code of Conduct that has been approved and adopted by its membership. These codes, whether for the Physician, Registered Nurse, Licensed Practical Nurse or other groups have many things in common. For example: (1) the rules are based on reason, good judgment, and an understanding of the difference between right and wrong behavior; (2) they strive to respect the dignity and rights of the individual patient.

MISS SMITH, V.N. Student	I've noticed that I have a tendency to judge all nurses by the actions of the few I know.
MISS JOHNSON	That's a common reaction and one good reason for each member of a group to strive for ideal behavior. Ethical conduct by the individual members of the group presents the whole group in a favorable light to the public.
MRS. DEEDS, Housekeeper Assistant	What do you mean by right and wrong? Maybe what is right for me is not right for you.
MISS JOHNSON	It is true that every person has his/her own "customs"and perhaps her/his own value system for what is right or wrong based upon his personal life experiences. However, by accepting employment in a hospital, the worker must accept the "ethics" or "customs" required by the employer.
MR. THOMAS Orderly	Why are ethics necessary? Couldn't the employer just give us a handbook of rules when we apply for a job?
MISS JOHNSON	Sometimes this is done, but through the ages societies and groups have had codes of conduct as a method of preventing friction between people, improving personal and group status, and encouraging growth or development in one's life. For example, Hippocrates, the Greek Father of Medicine, proposed a code of conduct for physicians before the birth of Christ!
MISS SMITH V.N. Student	I'd like to know how ethical conduct differs from my legal requirements as a hosptal employee.
MISS JOHNSON	That is a point which needs careful explaining. Ethical conduct codes are written and adopted by the membership of the groups. Ideal behavior is encouraged through education, example, and discussion. Hopefully, enforcement is seldom needed. But sometimes a person whose conduct is highly unethical may be disciplined by the group or even lose his membership in the group. As one of you mentioned earlier, the group is judged by the behavior of its members, so an unethical member is expected to conform or lose his membership privileges. None of you are as yet a member of a professional group, but you are members of the hospital group and as such, unethical conduct which reflects upon the hospital could result in reprimand or explusion from the hospital - that is, loss of employment.

MRS. SAYRE
New LVN

Miss Johnson, could you explain this a little more and perhaps give us some examples of the difference between unethical and illegal conduct.

MISS JOHNSON

Ethics has to do with our moral responsibilities or behavior as we said, and violation of an ethical concept means that we are not living up to ideal moral or ethical behavior. Legal requirements (laws) are set by the society as a whole, that is, by national, state, or local governments. Violation of these laws places the guilty person in trouble with the law enforcement agencies. For example: ethical conduct for a Registered Nurse or Licensed Practical Nurse requires that the uniform and cap should not be worn in public places. A nurse who does so is unethical, but she/he has not violated any laws that will cause him/her to be arrested. However, if the nurse takes money from the wallet of an unconscious patient, she/he has violated the law, and the action could result in her/his arrest and punishment. She/He has, of course, also committed a serious breach of ethics by her/his lack of ideal conduct.

MR. THOMAS
Orderly

I don't seem to fit in any group. I don't wear a cap, and I'm not an RN nor an LVN. Where do I get my ethical guidelines?

MISS JOHNSON

As an orderly giving direct patient care, you belong to the Hospital Group. And since you will be working under the direct supervision of the Registered Nurse and also with the Licensed Vocational Nurses, why don't you read the Codes of Ethics for these two groups?

Let's continue our conversation by making a list of specific situations where a hospital worker would have to make a choice in his or her behavior, based upon an ethical judgment. Mr. Thomas, can you name a principle or situation that you have experienced along this line?

MR. THOMAS,
Orderly

Yes, I must give the best possible care to each patient regardless of his financial status, religion, race, or creed.

MISS JOHNSON

Very good.

MR. THOMAS Orderly	And I must respect his religious beliefs and try not to convert him to mine.
MRS. SAYRE New LVN	**That certainly follows our basic guideline** of respecting the dignity and basic rights of the individual.
MISS JOHNSON	Mrs. Harmon, how do you think that "ethics" affect your relationship with your employer?
MRS. HARMON	I guess I should report for work on time, and not leave early, and not take time off unless I'm really ill.
MRS. WALTERS Nurse Aide	How about doing a day's work for a day's pay, and always doing your share of work so that your co-workers can rely on you?
MRS. HARMON	I think that would be fair to everyone.
V.N. STUDENT	Miss Johnson, I'd like to add to that list. You told us in class that we must stay with our patient if needed until relieved; isn't that part of ethical conduct, too?
MISS JOHNSON	Yes. If you were to leave before your relief came, and your patient suffered harm, it might also carry a legal penalty. So you see that the line between ethical (ideal) behavior and legal requirements is sometimes a little hazy. However, the worker who consistently holds to ideal behavior should not have to worry about meeting the requirements of the law. Miss Andrews, you had your hand up.
MISS ANDREWS	I read in the employee's handbook that I can't wear any jewelry on duty, nor any nail polish except very pale or clear. Why is that in the handbook?
MISS JOHNSON	The hospital worker's uniform is designed so that it can be easily cleaned to help the worker maintain a well-groomed and immaculate appearance. Unnecessary adornment such as floppy handkerchiefs, jewelry, etc., increase the difficulty of keeping clean, and are usually not permitted with the uniform. Soiled uniforms, jewelry, and other adornments may carry germs which can cause disease or infection. It is your ethical duty to prevent the transfer of germs from patient to patient. This can be easily done by keeping your uniform and hands clean. Organized nursing has had its

roots in both military and religious disciplines and adhered quite strictly to the dignity of the uniform as a "symbol" of the profession. However, a great deal more latitude is allowed now - the introduction of pantsuits and colored hose, are two examples. Although there is a gradual decrease in strict adherence to the symbolic uniform, you must still adhere to the basic principles of cleanliness to prevent disease and infections for your own protection as well as the protection of your patients.

In some agencies, particularly in caring for children or the emotionally ill, the nurses wear streetclothes or colored uniforms without the cap. Your employer has the right to establish the standards of apparel for his employees and by accepting employment, you have agreed to accept such standards. Another point about uniforms, try to wear your uniform only to and from work, and not to the grocery store or on shopping errands. When a hospital worker wears his identifying uniform outside of the health setting it is similar to a doctor wearing his stethoscope and carrying his "black bag" to do his errands. Items used in our work often become contaminated with germs and we may carry them to the unsuspecting public when we wear our duty clothes and equipment in public places.

Nail polish is affected by some of the solvents we use and it is difficult to deep it undamaged and attractive. Therefore, it is usually neater and less bothersome for you if you do not use nail polish on duty.

MRS. BOYD
Nurse Assistant

Does personal grooming come under the topic of ethics?

MISS JOHNSON

I would think so. Good hygiene and careful attention to cleanliness and grooming make your patient's environment more pleasant. He/she surely is entitled to that. Incidentally, good grooming includes careful and minimum use of cosmetics - avoid heavy eye make-up, obvious perfumes, extremes of any sort - which are not in good taste for wear in any situation. Frequently, cosmetics have a heavy, sweet odor, which is often nauseating to an ill patient. Therefore, if you are concerned about your patient's welfare, you will refrain from excessive use of cosmetics.

MRS. BOYD Nurse Assistant	Miss Johnson, last week Mr. Goldrocks tried to give me two dollars when I finished his bathtime care. I told him I wasn't permitted to accept it. How could I have handled this situation better?
MISS JOHNSON	Did you notice in the codes of ethics we read that you are supposed to accept only the money given by your employer? Tipping to ensure service could be disastrous in a hospital, couldn't it? It would violate the fundamental concepts of ethics - respect for the dignity and basic rights of the person. How do you think you would react in such a situation?
MISS SMITH VN Student	Maybe I could let my patient know that it is my pleasure, not only my job, to assist him. I can let him know this by my attitude, and how I respond to his needs.
MISS McGUIRE V.N. Student II	I think I might suggest that if he feels like making a cash donation, perhaps he would like to give it to the hospital fund for furnishing the new patient lounge, or whatever current project the hospital has. I think there is a difference between a patient offering me a gift or money when he/she first comes into the hospital, and if he/she leaves a handkerchief, card, or candy when he/she leaves. Is it unethical to accept the latter?
MISS JOHNSON	I don't think so, Miss McGuire, because if the patient has gone home he/she could hardly expect preferential service as a result of his/her gift. It would be nice though, if you received a gift, to share it with the other team members who also cared for the patient. I guess that would be following Golden Rule.
MRS. AGALA Diet Assistant	Something I saw yesterday bothers me. One of the hospital workers took the dessert from a patient's tray and put it in the utility room, and later I saw her eating it.
MISS JOHNSON	Of course, we don't know all the circumstances, but taking what is not ours is called stealing, and that is a violation of law. I wonder if the worker would have openly eaten the dessert if the head nurse or hospital administrator had been present? You are not responsible for the actions of others, but by being responsible for your own actions - you set a good example for others. In some agencies, eating food from a patient's tray is considered cause for immediate termination from your job.

MR. THOMAS
Orderly

What should be done when a person observes someone violating either the law or ethical concepts; doesn't it give consent if nothing is done?

MISS JOHNSON

You are full of hard questions today, Mr. Thomas. No list of rules could be given that would fit every circumstance. Who is involved, the nature of the infraction, and the circumstances must all be taken into consideration. Sometimes it is best to speak directly to the person involved and allow him/her a chance to alter his/her behavior, and sometimes a private discussion with your superior will give you appropriate help in deciding what to do.

One of your most important legal and ethical responsibilities in a health care situation is to guard the privacy of your patient. Privacy is one of his/her basic rights. When a patient is sick, she/he is dependent upon other people to do many things that she/he cannot do himself/herself. He/she is entitled to privacy in all respects - about her/his condition, personal data, her/his illness, and everything that you might learn because he/she is a patient. Sometimes it is tempting when a hospital worker is "on the outside" to reveal information about patients. It is exciting to tell something nobody else knows. This is illegal in some instances.

MRS. DEEDS
Housekeeping
Assitant

Sometimes patients ask me questions when I'm cleaning their rooms. Last week one of them asked me if the patient across the hall had died. I didn't know what to say, although I had just finished cleaning his unit after he was taken away.

MISS JOHNSON

Patients are often curious about other patients, particularly about one who is very ill or may have expired. Your ingenuity will be challenged to evade the question, and not appear rude, or dishonest. How do you class members think Mrs. Deeds might have answered her patient?

MISS McGUIRE
V.N. Student II

Could she have evaded answering by saying something like, "I'm not involved with assigning patients their rooms or in moving them from one room to another.

MISS SMITH V.N. Student II	How about a simple courteous "I don't know."
MISS JOHNSON	That could be a truthful reply, for perhaps the patient did not expire, but was moved to the intensive care unit, or to some other room.
MR. TROYLE Maintenance Man	I'm a new employee, and my neighbor was hurt in an accident and brought here. I was looking at his chart to see how he was. The head nurse jumped all over me.
MISS JOHNSON	Some of you will see information on a patient's chart. You may have reason to use the chart or to see it by accident. Unless your work requires you to make notations on the chart or to use it in order to give care to the patient, do not read it or even take it from the chart rack. The chart is a legal document, belongs to the hospital, and the material in it is known as "privileged information" - that is, it is very private and is meant only for those people who need it to care for the patient. Privacy of everything surrounding the patient is his right. Another point about privacy. It is highly unethical to discuss your patients in the cafeteria, hallways, or public places. Family and friends often overhear conversations and misunderstand what is said. Sometimes they think you are talking about their loved one or friend. Loose gossip can be very upsetting to others. Guard your conversation at all times! Discussion of your patients should be limted to those team members who assist or share in his care and then the discussion should occur in the appropriate place, so it is not overheard and misinterpreted by outsiders.
MISS BOYNE Ward Clerk	I think the topic of ethics is quite complex, but I'm glad we had this class today, because I have some guidelines to help me in my work. I'm going to try to be an ideal employee because it should help to keep me out of trouble with my employer and the law.
MISS JOHNSON	No doubt that is true, but aren't there other good reasons?
MRS. BOYD Nurse Assistant	Yes, I feel good when I know I'm doing the right thing and when I have done a good job.

MISS JOHNSON We have made quite a list of ethical guidelines today from our discussion. We can summarize by saying: Whenever you are faced with a situation involving making a moral, or ethical, decision, ask yourself these questions:

1. How will my action or choice affect the patient?

2. How will my action or choice affect my employer or co-workers?

3. How will my action or choice affect me?

If your answer to all three questions is positive, your behavior would uphold the dignity and basic rights of the patient and your employer and maintain your own self-respect, and you have probably made a sound choice.

Read the following hypotheical situations and filling in the blanks or circling the appropriate underlined word or words.

Situation A.

A patient in Room 201 is in critical condition, and although you have not cared for him you have heard one of the other nurses mention that the doctor feels the patient will not live much longer. A relative of the patient asks you in the corridor if Mr. Brown has improved. Your answer might be: "You probably should speak to the doctor about that." Ethically, who is being considered here.

1. ____________________ 2. ____________________

3. ____________________

4. In any situation where the answer is not clear to you, it is appropriate to refer the question to your (supervisor) (co-worker).

5. In doing the above, you recognize your (legal) (ethical) (both legal and ethical) limitations.

Situation B.

A young girl has been brought in by ambulance to the Emergency Room. You are the ward clerk there and note that she has swallowed a small glass of turpentine and is now having her stomach emptied of its contents. When you go to lunch that day, the other ward clerks want to know why the ambulance had its sirens sounding, how old the girl is, and why she was brought in. Since this was an attempted suicide, the police reporters were also in the hallway. You were the person who recorded the emergency room notes and so you have some information. When asked why the girl took the turpintine, you might answer: (Circle the letter of correct answer)

1. (A) I assume because she is pregnant and unmarried.
   (B) She must have had a desire to die.
   (C) This information is confidential.

2. In this situation, to discuss the patient not only violates her rights to privacy, but could result in a (legal action) (loss of employment) (both of these).

Situation C.

Carol Brown, nurse aide, has always been conscientious and reliable in her work habits. She is scheduled to work on the weekend and receives an invitation from an old friend to spend the weekend at Yosemite National Park. Carol has never been to Yosemite and does not often have such opportunities. She ponders long and hard before arriving at a decision. Persons considered in her decision making would be:

1. ____________________ 2. ____________________

3. ____________________ 4. ____________________

Situation D.

Mr. Grimm in Room 410 always orders his meals from the hospital's special gourmet menu. At noon on Sunday he didn't touch any of the food although the dinner was excellent. The filet and strawberry pie were indeed tempting. You are the dietary aide who is responsible for taking trays back to the kitchen. In an effort not to waste such delectable food, you decide: (Circle correct letter)

1. (A) To eat it yourself
   (B) To give it to a fellow employee who is quite needy and doesn't eat properly.
   (C) To ask the dietician to confer with the patient about ordering smaller portions.

Situation E.

Mrs. Johann insists you must take the money or you will hurt her feelings. Therefore you: (Circle the correct letter)

1. (A) Tell her of some specific need the hospital has to which she could make a contribution.
   (B) Suggest a fund in her name with suitable recognition.
   (C) Accept the gift so that there are no hurt feelings anywhere in the situation.

MEDICAL ETHICS
UNIT I

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

Evaluated to the satisfaction of the instructor.

Assignment Sheet #2

Evaluated to the satisfaction of the instructor.

Assignment Sheet #3

Evaluated to the satisfaction of the instructor.

Assignment Sheet #4

1. Ethics is a code of behavior that represents the ideal conduct for a particular group.
2. By the group, or lose membership in the group
3. law enforcement agencies

Assignment Sheet #5

Situation A

1. Patient - his/her privacy is respected.
2. Employer or group - you are representing high ideals of confidence.
3. Yourself - self-respect is maintained.
4. Supervisor.
5. Both legal and ethical.

Situation B

1. C
2. Both of these

Situation C

1. The patient
2. Co-workers
3. Employer
4. Herself

Situation D

1. C

Situation E

1. A

MEDICAL ETHICS
UNIT I

UNIT TEST

1. Indicate whether true or false, concerning health care history:

    _____ a. In ancient times health care was just as advanced as it is today, but the dark ages caused people to have to start all over again.
    _____ b. Hippocrates was a Greek physician who lived in the dark ages.
    _____ c. Even in the dark ages outstanding work, especially in the study of anatomy, was done by Leonardo da Vinci.
    _____ d. What we know as modern health care did not really begin until the mid-1800s.

2. Define ethics.

3. Name two codes of ethics discussed in the historical development of medical ethics.

4. List the general ethical guidelines for Health Occupations Education students.

5. Discuss the confidentiality of information.

6. Explain the limitations on technical information given to the public.

7. List the ethical guidelines to be followed at work.

8. List 3 rights due to patients as individuals.

9. Your doctor has observed that you are very tense about your job as a ward clerk in the hosptial unit, and has recommended a common tranquilizer for you to take three times a day. You know that often when patients go home, they leave their medications which are then returned to the pharmacy. You ask the medications nurse if when these tranquilizers are left on a patient's discharge, she could just give them to you, saving the expense of having your prescription filled.

    1. This is a distinct breach of ______________________ on your part.

    2. Your ethical behavior is lowered. However, if the nurse grants your request, she/he is prescribing or dispensing medicine without a license and this a ________________________ offense.

10. You are a nurse's aide and have cared daily for Mrs. Johann. She has come to rely on you, and when she is ready to go home, she wants to give you a sum of money in appreciation for the "lovely things you have done for her." (Circle the correct letter)

    (A) You must explain to her that the service is part of her care.
    (B) You are paid a salary for given services and patients pay for their care also.
    (C) Accept the gift of money and tell nobody so that no one else will feel hurt that she selected only you.

11. Matching

_____ moral law

_____ common law

_____ physical law

_____ statuatory law

A. Law based on custom and precedent

B. Law of Moses

C. Laws passed by federal and state government.

D. Law of gravity

MEDICAL ETHICS
UNIT I

ANSWERS TO TEST

1. a. F
   b. F
   c. T
   d. T

2. Evaluated to the satisfaction of the instructor.

3. Oath of Hippocrates and the Nightingale Pledge.

4. a. In caring for the sick, students will help preserve life, ease the suffering of patients, and work toward restoring health to all patients.

   b. Maintain good moral character, be loyal to employer, to patients, and to co-workers.

   c. Practice sound health habits in order to maintain personal health and be able to carry out duties.

   d. Give care on the same level to all patients.

   e. Cooperate with other workers, carry out duties responsibly.

   f. Do not discuss confidential information given by a patient, never discuss diagnoses except with the patient's doctor or nurse.

   g. Never perform a procedure or give treatment that you are not qualified to perform.

   h. Do not discuss your own problems or personal affairs with patients.

5. a. Information about patients.

   The personal records of the patient, which include history, physical examination, medical or dental procedures, etc., must be treated with strictest confidence. If any such information must be discussed with other personnel, such discussion should take place in private where it cannot be overheard.

A safe rule to follow in discussing patients is to tell only the information you read in the newspaper.

b. Information about personnel.

Never report any information about anyone at work. Personal information about employees must be treated with complete confidentiality.

6. Health Occupations Education students are thought to know more about health because of their work and training. People frequently ask questions about health problems and rely on the answers given by Health Occupations Education students. Students must answer such questions with greatest care. Most often they should suggest the patient ask the doctor.

7. a. Be accurate in following directions and in reporting. Report any error or accident to your superior at once.

   b. Take proper care of equipment and supplies.

   c. Treat co-workers with respect and courtesy.

   d. Complete assigned tasks.

   e. Do not grant a patient's request that is not mentioned on the chart without checking with the supervisor.

   f. Perform only those tasks that you have learned.

   g. Accept no money or expensive gifts from patients.

   h. Respect the privacy of patients and their families.

   i. Know the health care facility's rules and policies, and observe them exactly.

   j. Do not discuss your own problems and personal affairs with the patients. Avoid inappropriate, flippant, or unbecoming behavior.

   k. Treat all patients with compassion, kindness, and respect. Help patients to maintain their dignity and confidence.

8. Evaluated to the satisfaction of the instructor.

9. 1. ethics

   2. legal

10. a.

11. B
    A
    D
    C

HEALTH ISSUES
UNIT II

UNIT OBJECTIVE

After completing this unit, the student will be able to compare and contrast different definitions of health, relate common health problems to personal and family health, and demonstrate basic knowledge of health insurance. This knowledge will be evidenced by satisfactory completion of a unit test.

SPECIFIC OBJECTIVES

After completing this unit, the student will be able to:

1. Define health
2. State the World Health Organization's definition of health.
3. Name five ways disease can be prevented.
4. **Rank in order the four leading causes of death.**
5. List four health problems of the future.
6. **Identify eight** communicable diseases.
7. List five types of health insurance.
8. Distinguish between group health insurance and individual health insurance.
9. Evaluate your own or your family's health insurance.
10. **List the three basic types of quackery.**
11. **Develop and evaluate all advertisements of a health product.**

HEALTH ISSUES
UNIT II

SUGGESTED ACTIVITIES

I. Suggested activities for the instructor:

A. Provide students with objective sheet.

B. Discuss unit and specific objectives.

C. Provide students with information sheet.

D. Discuss information sheet.

E. Provide information for students to use in completing assignment sheets.

F. Divide class into small groups and ask each group to develop a definition of health and health care. Combine group definitions on a chalkboard, discuss, and select a comprehensive definition acceptable to the class.

G. Assign groups of students (three to five students per group) to prepare panel presentations on the following subjects:

- Development of trauma centers
- Paramedical teams
- Health problems of the future
- Moral and ethical health problems
- Pollution problems including air, water, and sound

H. Invite insurance professionals to speak to the class.

I. For class discussion:

More and more group health insurance policies are being made available through business firms, industrial organizations, and associations. (a) Why do you suppose so many group health insurance plans are available through employed groups? (b) Many employers pay part of all of the costs of health insurance for their workers. Can you give reasons for this? How do employers benefit from such contributions? (c) Compare the features of group health insurance programs with individual health insurance policies. What are the advantages and disadvantages of each.

J. Interview a resource person from a local agency involved in personal and family health problems.

K. **Invite a Social Security representative to speak to the class.**

L. **Give test.**

II. Instructional Materials

A. Objective sheet.

B. Information sheet.

C. Assignment sheets.

1. Assignment Sheet #1
   Defining Health
2. Assignment Sheet #2
   Family Tree and Health Records
3. Assignment Sheet #3
   Health Insurance Types
4. Assignment Sheet #4
   Evaluation of Health Insurance
5. **Assignment Sheet #5**
   Evaluation of Health Information (Quackery)

D. **Answers to Assignment Sheets**

E. **Test.**

F. **Answers to Test.**

III. Unit References:

A. Lee, Ruth M., Orientation to Health Services. Indianapolis, Indiana. The Bobbs-Merrill Company, Inc., 1978.

B. Minnesota Secondary Health Occupation Curriculum Guidelines, Division of Vocational-Technical Education, Minnesota Department of Education.

C. Curriculum Guide for Health Occupations Education. Illinois Office of Education, Department of Adult, Vocational and Technical Education.

IV. Additional resources:

Audio-visuals

1. "Germs and Your Body." Arkansas Department of Education. Arch Ford Education Building, Little Rock, AR 72201.
2. "The World Health Organization at Work." Arkansas Department of Health, Division of Public Health Education, 4815 West Markham, Little Rock, AR 72201.
3. Films available from: The Arkansas Department of Health
   Division of Public Health Education
   4815 West Markham Street
   Little Rock, AR 72201

   J 118 "World Health Organization at Work"
   J 110 "The Big Three"
   J 107 "How Disease Travels"
   J 123 "Right From the Start"
   J 116 "Spot Prevention"

HEALTH ISSUES
UNIT II

INFORMATION SHEET

I. Definition of health:

   A. World Health Organization defines health as a "state of complete mental, physical, and social well-being."

   B. Freedom from signs and symptoms of disease is likely to be as close to "normal" or "healthy" as possible. Health is a dynamic "state of being".

II. Prevention of Disease:

   A. Immunization against communicable diseases.

   B. Environmental measures such as sanitation services, control of air and water pollution, inspection of habitation and building controls.

   C. Antibiotics, vaccination, pasteurization, and sterilization.

   D. Genetic factors, nutrition, and hygiene.

   E. Health education.

III. Current Health Problems:

   A. Over-population.

   B. Number one killer - heart disease.

   C. Second leading cause of death - cancer.

   D. Third leading cause of death - stroke.

   E. Fourth leading cause of death - accident.

   F. Major medical problem in U. S. - mental health

   G. Drug and alcohol abuse.

INFORMATION SHEET

IV. Health Problems of the Future:

- A. Food and fuel shortages
- B. Housing
- C. Pollution
- D. Moral and ethical issues

V. **Communicable Diseases:**

Viral Diseases

- A. Smallpox
- B. Infectious Hepatitis
- C. Polio
- D. Influenza
- E. Chickenpox
- F. Measles Rubeola
- G. Measles (Rubella)

Bacterial Diseases

- A. Salmonella
- B. Infant diarrhea
- C. Typhoid
- D. Staphylococcus
- E. Streptococcus
- F. Tuberculosis
- G. Diphtheria
- H. Pertussis
- I. Menningococcus
- J. Meningitis
- K. Pneumococcus
- L. Pneumonia
- M. Gonorrhea
- N. Syphilis

VI. Health Insurance

Planning a health insurance program takes careful study because the protection should be shaped to the needs of the individual or family.

INFORMATION SHEET

However, the task is simplified for many families because a foundation for their coverage is already provided by group health insurance at work.

Group health insurance. More than 70 percent of all health insurance issued by life insurance companies comes under group plans. Coverage generally ends when an employee leaves his job. Frequently, however, the group plan allows for conversion to an individual policy at higher cost. Because costs of administering large groups are relatively low, group insurance is less expensive than individual health insurance. Also, employers often pay part or all of the cost for their employees.

Individual health insurance. This covers either one person or a single family. If the kind of health insurance a family needs isn't made available through a group, or if additional coverage is needed, then an individual policy is the solution, especially as it can be tailored precisely to particular needs.

Health insurance is available from insurance companies and from such organizations as Blue Cross and Blue Shield. Health insurance is also available from other independent sources, including group practice prepayment plans, and plans sponsored by fraternal societies, trade unions and rural cooperatives.

For persons 65 or older and certain disabled people, the federal government has a health insurance program under Social Security called Medicare. Local Social Security Administration offices take applications for Medicare and provide information about the program.

Medicare has two parts-hospital insurance and medical insurance. Hospital insurance can help pay for inpatient hospital care, inpatient care in a skilled nursing facility, and home health care. Medical insurance can help pay for medically necessary doctors' services, outpatient hospital services, and a number of other medical services and supplies that are not covered by the hospital insurance part of Medicare. Medical insurance also can pay for home health services.

Medicare does not pay the full cost of some covered services. As general health care costs rise, these amounts may increase. For people with very low incomes, the Medicaid program in their State may pay the amounts Medicare does not pay and may pay some health care expenses not covered by Medicare.

Health insurance plans which supplement Medicare benefits, or which help pay expenses not covered under the government program, are available from many insurance companies and other organizations. In addition there are policies which provide cash payments to insured aged persons during a period of hospitalization.

INFORMATION SHEET

TYPES OF HEALTH INSURANCE

Five basic types of health insurance are available under group and individual policies.

1. Hospital expense insurance pays part or all of hospital bills for room, board, and other charges. Usually a maximum amount is allowed for each day in the hospital, up to a maximum number of days. An additional stated payment is allowed toward items like use of the operating room, in-hospital laboratory tests and X-rays, drugs, and so on. More people have hospital insurance than any other kind.

2. Surgical expense insurance pays part or all of the surgeon's fee for an operation. Most policies list a number of specific operations and the maximum fee allowed for each. The higher the maximum fees allowed in the policy, the higher the premium charged. This kind of insurance is often bought in combination with hospital expense insurance.

3. Regular medical insurance helps pay for the cost of a physician's care not involving surgery. It also lists maximum benefits for specified doctor's calls on the patient at home or in the hospital. This type of insurance is usually bought in combination with hospital and surgical insurance. The three together are often called basic health coverage.

4. Major medical expense insurance protects against the large expenses of a serious injury or a long illness. It adds greatly to the protection offered by the three basic coverages. The cost of serious illnesses can easily exceed benefits under hospital, surgical, and regular medical policies. Major medical pays the bulk of the additional costs. The maximum benefits payable under major medical insurance are high--$20,000-$50,000 or even more.

This kind of insurance helps pay most kinds of expenses both in and out of a hospital. These may include doctor bills, nursing care, X-ray and laboratory charges, medicines, ambulance service, a wheelchair, crutches, and other costs. Because it offers such a wide range of benefits and provides such high maximums, major medical insurance contains two features to help keep the premium within the policyholder's means.

A deductible provision calls for the policyholder to pay a basic amount before the policy benefits begin, for example the first $500. Sometimes the deductible amount is covered by the benefits of a basic hospital and surgical plan.

INFORMATION SHEET

A second feature--the co-insurance provision--calls for the policyholder to share the expenses beyond the deductible amount. Most policies pay 75 or 80 percent of expenses above the deductible amount. The policyholder pays the rest.

(One newer type of major medical insurance has a very low deductible amount, often $50 or $100, and is offered without any separate basic plan. This all-inclusive health insurance is called comprehensive major medical because it helps pay hospital, surgical, medical, and other bills.)

A major medical policy may set specific maximum benefits for certain expenses, such as hospital room and board and the cost of surgery.

5. Disability income insurance. This kind of policy helps replace income when a wage earner can't work because he is sick or injured. The amount of replacement income and the length of time it will be paid can be chosen to fit particular needs. However, the maximum benefit is usually no more than 40 to 60 percent of an individual's earnings.

Benefit periods for disability insurance policies can range up to 12 months, two years, five years, or to age 65. But most policies provide for a wait of a week, a month, two months or 90 days before benefit payments begin. The purpose of this waiting period is to bring down the cost to fit each family's financial situation. The choice a wage earner makes depends partly on how long his company will pay him while he is not able to work. Another consideration is the family's savings or other resources. By meeting the expenses of a short illness out of their own savings and using insurance to protect against longer disability, a family can buy protection at lower cost.

Short term policies usually pay benefits for one or two years. The purpose is to provide "readjustment" income while the family is planning what it will do if the wage earner's disability should continue. Long term policies often pay benefits for life if the policyholder was disabled by an accident, and from 10 years up to age 65 for illness. Professional people, especially doctors, lawyers, and others who are self-employed, often purchase long-term policies. Naturally, the longer the benefit period, the higher the premium for the policy.

INFORMATION SHEET

An important feature of individual health insurance policies is the incontestable clause. This means once the policy has been in effect for a period of time--usually two or three years, depending on state law and type of policy--the company must continue the policy unless the policyholder stops paying his premiums. This is the usual insurance company practice.

RENEWAL PROVISIONS

Most health insurance policies cover a period of one year, but they can be renewed according to the provisions that are spelled out in the contract.

Let's take a look at how three renewal provisions in health insurance policies affect premiums. The least expensive policy--renewal at the option of the company--is the kind that can be renewed each year, subject to review by the insuring organization. A policy that is guaranteed renewable--renewable up to a certain age limit or for life--costs somewhat more. The insurance company may change the premiums only for a complete class of policyholders, never for one individual. Most expensive, because it offers the strongest guarantee, is the policy that is both guaranteed renewable and noncancellable. Here, the policy cannot be cancelled except by the policyholder. The premiums cannot be changed by the insurance company.

HEALTH INSURANCE DEVELOPMENTS

One interesting development in health insurance coverage is dental insurance, which has been offered, usually to groups, by an increasing number of insurance companies and prepayment plans in the past few years. Other special purpose health insurance includes a separate policy covering prescription drugs for those over age 65, and vision care coverage, including glasses and eye examinations for those under age 65.

These developments are part of a trend by insurance companies to make possible more comprehensive care than is generally available under former types of policies. They are called accomodation coverages--that is, if the policyholder wants such coverage, the company will write it into the policy.

HEALTH INSURANCE AT WORK

Here are two examples of how health insurance works.

INFORMATION SHEET

Bill Baxter

A serious illness or accident could work a hardship on a family's financial resources if not for disability income insurance. In one case, Bill Baxter worked for a small company and made $10,000 a year. Then one day he became seriously ill and had to spend a year recovering at home. Under his company group disability insurance plan, he received a month's sick leave with pay.

Without his individual disability insurance, Mr. Baxter would have had to use his savings to meet the expenses which piled up in the following 11 months. But Mr. Baxter was adequately covered with a personal income disability income policy. He had chosen a plan with a 30-day waiting period to coincide with his employer's group plan. It paid him a check with each month he was disabled. In a year's time, he was well enough to return to his job.

Martin Cass

Martin Cass felt a sharp pain in his side one afternoon. He called his doctor who diagnosed his difficulty as gallstones. Mr. Cass was admitted to the hospital where his gall bladder was removed. He remained in the hospital 10 days.

The one bright spot for the Cass family was their comprehensive major medical policy. This policy has a $50 deductible and an 80 per cent co-insurance feature. Without the insurance, Mr. Cass would have had to pay more than $1,800 in medical bills. With it, he paid $403. Here's how his benefits were figured:

Covered Medical Charges

Semi-private room and board (10 days at $60)	$600
Other hospital services	400
Surgery	600
Anesthetist	175
Prescriptions	40
Total Charges	$1,815
Total Charges	$1,815
less deductible	-50
Balance of covered medical charges	$1,765
Amount paid by plan (80%)	$1,412

Summary

Total Charges	$1,815
Less paid by plan	-$1,412
Total paid by Mr. Cass	$403

INFORMATION SHEET

VII. Quackery

A. What is quackery?

The term "quackery" encompasses both people and products. The "health practitioner" who has a "miracle cure" but no medical training is a quack; the worthless drug or food supplement pushed in deceitful promotions is a quack product; the machine that has impressive knobs and dials, but does nothing except take money out of the pockets of the unsuspecting, is a quack device.

B. What kinds of quackery are there?

There are basically three types of quackery: worthless drugs and cosmetics; silly food fads and unnecessary food supplements; and useless medical devices. Their promoters' interest is not to protect or restore your health, but to separate you from your money.

Worthless drugs: These include "cures" for baldness among men, which is incurable; chemical "face peels" that promise new youth but may bring permanent disfigurement; "prompt relief" from colitis through laxatives which seriously worsen this condition; drugs that "melt away" fat without dieting - when dieting is the only way known to medicine to reduce weight. Most cruel and dangerous of all are the "effective treatments" for diabetes and cancer. In diabetes, they can cause coma and death; in cancer, the patient is robbed of the one element that can save his life-valuable time during which really effective treatment could still be administered.

Food Fads: Contrary to what self-appointed "nutrition experts" say, American farm land is not "depleted"; chemical fertilizers and modern food processing do not deprive our food of its nutritive value. Americans are the best fed people in the world; diseases caused by dietary deficiencies have all but disappeared. Nutritional needs of older people are much like those of other age groups. The need for vitamin, mineral, or other food supplements can only be established by a physician.

INFORMATION SHEET

Medical Devices: The electrocardiograph records the action of the heart; a special gauge shows the blood pressure; X-rays record abnormalities within the body. But there is no machine which can diagnose or treat different diseases by simply turning a knob or flashing lights; no apparatus can reduce excess weight by vibration; no glove or bracelet can "cure" arthritis with "electricity" or "uranium ore." Sometimes quackery even involves legitimate devices. It is practically impossible to get properly fitted eyeglasses or dentures by mail order, for example.

C. How can quackery be recognized?

Quackery follows certain well-defined patterns. If your answer is "yes" to any of the following questions, it is very likely that you are one of the thousands of people who are victimized by quacks each year.

Is the product or service offered a "secret remedy"?

Does the sponsor claim that he is battling the medical profession which is attempting to suppress his wonderful discovery?

Is the remedy sold door to door, by a self-styled "health advisor," or promoted in lectures to the public, from town to town?

Is this "miracle" drug, device, or diet promoted in a sensational magazine, by a faith healers' group, or a crusading organization of laymen?

Does the promoter show you "testimonials" on the wonderful miracles his product or services have performed for others?

Is the product or service good for a vast variety of illnesses, real or fancied?

D. What can you do?

If you suspect that you are the victim of quackery, there are a number of things you can do:

See your physician or inform your county medical society.

INFORMATION SHEET

Get in touch with the Food and Drug Administration, either at its District Office in your area, or in Washington, D.C.

Ask the Better Business Bureau about the reputation of the promoter.

If the drug or device was promoted through the mail, inform your local Post Office.

HEALTH ISSUES
UNIT II

ASSIGNMENT SHEET #1--DEFINING HEALTH

Write your own definition of a "healthy" person and an "unhealthy" person. Consider people you know from different age groups. What would their definitions be of a healthy and an unhealthy person?

Look at the World Health Organization's definition of health. Compare and contrast your definitions with the WHO definition.

Be prepared to participate in a classroom discussion of the definitions of health.

CONSTITUTION OF THE WORLD HEALTH ORGANIZATION*

The States parties to this Constitution declare, in conformity with the Charter of the United Nations, that the following principles are basic to the happiness, harmonious relations and security of all peoples:

> Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.
>
> The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition.
>
> The health of all peoples is fundamental to the attainment of peace and security and is dependent upon the fullest co-operation of individuals and States.
>
> The achievement of any State in the promotion and protection of health is of value to all.
>
> Unequal development in different countries in the promotion of health and control of disease, especially communicable disease, is a common danger.

Healthy development of the child is of basic importance; the ability to live harmoniously in a changing total environment is essential to such development.

The extension to all peoples of the benefits of medical, psychological and related knowledge is essential to the fullest attainment of health.

Informed opinion and active co-operation on the part of the public are of the utmost importance in the improvement of the health of the people.

Governments have a responsibility for the health of their peoples which can be fulfilled only by the provision of adequate health and social measures.

Accepting these principles, and for the purpose of co-operation among themselves and with others to promote and protect the health of all peoples, the Contracting Parties agree to the present Constitution and hereby establish the World Health Organization as a specialized agency within the terms of Article 57 of the Charter of the United Nations.

*Chronicle of the World Health Organization, Vol. 1, 1947.

HEALTH ISSUES
UNIT II

ASSIGNMENT SHEET #2--FAMILY TREE AND HEALTH RECORDS

Develop a family tree identifying disease patterns and compile an individual health record of childhood illnesses and immunizations.

IMMUNIZATIONS

Vaccine	Date Given
POLIO Poliomyelitis	1.
	2.
	3.
	4.
	5.
DTP/DT Diphtheria, Pertussis (Whooping Cough) and Tetanus	1.
	2.
	3.
	4.
	5.
Measles	
Rubella	
Mumps	

ACCIDENTS

Fractures

Burns

Others:

ILLNESSES

	Date	Age
Roseola		
Measles		
German Measles		
Chicken Pox		
Mumps		
Scarlet Fever		
Whooping Cough		
Bronchitis		
Pneumonia		
Ear Infections		
Throat Infections		
Urinary Tract Infections		
Skin Problems		

Others:

Comments:

OPERATIONS

HEALTH ISSUES
UNIT II

ASSIGNMENT SHEET #3--HEALTH INSURANCE TYPES

Five types of health insurance policies, some with different provisions, have been described for you. For each of the case situations given below, indicate the kind of health insurance that would best meet the needs presented.

a. Larry Beldon, a guard on the varsity team, injured his back in scrimmage. He was hospitalized for five weeks, much of the time being spent in traction. What type of insurance would have paid for most or all of his $60 a day care? . . .

____

b. While in high school, Glen Hummel worked part time in a department store. Now at age 26, Glen is assistant manager of the store and he has a promising future with the company. He feels he earns enough to meet ordinary medical and hosptial costs, but he desires protection against expenses of a serious injury or long illness. What type of policy should Glen have? . . . .

____

c. Tony's father has been very ill for seven weeks. His employer continued paying full wages for only two weeks. What type of health insurance would have provided continued financial help for the family? . . . .

____

d. Paulette McKenna's younger sister had her tonsils removed and at the same time a minor operation was performed to straighten out a crooked finger. Fortunately her parents had what type of insurance to cover most of the fees for these operations? . . . .

____

e. John Cook wants coverage to help pay for most of the costs in the event of serious need for medical treatment. John feels he would be able to pay for about 20 percent of such costs, but he wants a policy that will take care of the remaining costs. What provision in a polciy would suit John's needs? . . .

____

HEALTH ISSUES
UNIT II

ASSIGNMENT SHEET #4--Evaluation of Health Insurance

Evaluate family's health insurance plan.

OUR HEALTH INSURANCE: IS IT ADEQUATE?

Use these questions to assess your own or your family's health. insurance.

1. What company wrote the policy?

____

____

2. Is it (are they)

   ______ a. an individual or family policy
   ______ b. a group plan
   ______ c. both

3. What family members are covered by the insurance policy?

____

____

4. To what age are children's health expenses covered?

____

5. Are newborn babies covered? _____ Beginning at what age? ___

6. How does our insurance help pay the following expenses?

   a. Hospital

      Maximum amount for daily room and board: $ ____________
      Length of benefit period: ____________
      Payments for other services: ____________
      Maternity expenses: ____________

   b. Surgical Expenses

      Maximum amount for surgery: $____________

c. Major Medical Expenses

Maximum overall benefits: $____________________
Proportion of total expenses beyond the deductible that must be paid by insurance company: __________%
Top limit for
1. hospital services: $____________________
2. surgery: $____________________
3. other: $____________________ ____

d. Physicians' Fees

Maximum in-hospital: $________, or ________ per visit
Maximum office call: $________, or ________ per visit
Maximum at home: $ ________, or ________ per visit
Number of visits paid for: ____________________

e. Disability Income

Amount of payment: $____________
Length of benefit period: ________________ months
Principle of sum for death and loss of limb: $________
Amount allowed for medical treatment: $____________

7. How do the benefits of our insurance compare with local hospital and physicians' fees?

	Our Insurance	Local Costs	%
Hospital			
Surgical			
Major Medical			
Disability			

8. Is our insurance

_____ a. guaranteed renewable until age _____
_____ b. subject to renewal by the insurance company

9. Is there a deductible we must pay before insurance benefits starts? _____ If yes, how much? $________________

10. Are there waiting periods before benefits start? ____________
    If yes, how long for
    a. Maternity ______________________________
    b. Pre-existing conditions ______________________________
    c. Other ______________________________

11. How and when do we apply for benefits?

    ____

    ____

    ____

12. If an insured family member is/becomes disabled, what help might be available from the following sources:

    a. Workmen's Compensation ______________________________
    b. Social Security ______________________________
    c. Employer ______________________________
    d. Union ______________________________
    e. Fraternal Organization ______________________________
    f. Life Insurance Disability Income ______________________________
    g. Other ______________________________

    ____

    ____

HEALTH ISSUES
UNIT II

ASSIGNMENT SHEET #5--EVALUATION OF HEALTH INFORMATION (QUACKERY)

Evaluate the posters displayed in the classroom using the criteria below. Prepare your evaluation for classroom presentation.

AND/OR

Develop an advertisement. Working in groups of two to three students, plan an advertisement of a health product of your choice, (either an actual product on the market or an imaginary product which you have created.) As the promoters of the product, you want to develop the most effective advertisement in order to increase sales.

State the advertisement in the class. Other members of the class will evaluate your advertisement in terms of its effectiveness and scientific validity.

Gather posters or media advertisements of health products. Evaluate each poster in terms of its validity and effectiveness.

Guidelines

1. Name, title and background of promoter. (Is the title professionally recognized and legitimate?)
2. Product
    a. Components and pharmacologic action of each component.
    b. Medical condition for which product is used.
    c. Instructions for use.
    d. How patient receives products, e.g. through mail.
3. Method of initial diagnosis of medical condition, e.g. through mail, or by patient, or by M.D.
4. Method of post-treatment diagnosis.
   (Does the patient himself decide that he is "cured?")

5. Medical problem

    a. Accepted medical treatment

    b. Proposed treatment by product--scientific validity.

    c. Comparison of accepted medical treatment and treatment proposed by product promoter.

6. Potential harm from proposed treatment.

HEALTH ISSUES
UNIT II

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

Evaluated to the satisfaction of the instructor

Assignment Sheet #2

Evaluated to the satisfaction of the instructor

Assignment #3

a. major medical expense insurance

b. comprehensive major medical expense insurance

c. disability income insurance

d. surgical expenses insurance

e. co-insurance provision

Assignment Sheet #4

Evaluated to the satisfaction of the instructor

Assignment Sheet #5

Evaluated to the satisfaction of the instructor.

HEALTH ISSUES
UNIT II

UNIT TEST

1. Define health in your own words.

2. State the World Health Organizations definition of health.

3. Name 5 ways disease can be prevented.

4. Rank in order the four leading causes of death.

5. List 4 health problems of the future.

Identify 8 communicable diseases.

7. List 5 types of health insurance.

8. Distinguish between group health insurance and individual health insurance

9. List the three basic types of quackery.

10. Evaluate your own or your family's health insurance. (If this activity has not been completed prior to the test, ask the instructor when it should be completed.)

11. Develop and evaluate all advertisements of a health product. (If this activity has not been completed prior to the test, ask the instructor when it should be completed.)

HEALTH ISSUES
UNIT II

ANSWERS TO TEST

1. Evaluated to the satisfaction of the instructor.

2. "A state of complete mental, physical, and social well-being."

3. a. Immunization against communical diseases
   b. environmental measures
   c. antibiotics, vaccination, pasteurization, sterilization
   d. genetic factors, nutrition, hygiene
   e. health education

4. a. heart disease
   b. cancer
   c. stroke
   d. accidents

5. a. food and fuel shortages
   b. housing
   c. pollution
   d. moral and ethical issues

6. Any eight of the communicable diseases listed in the information sheet

7. a. hospital expense insurance
   b. surgical expense insurance
   c. regular medical insurance
   d. major medical expense insurance
   e. disability income insurance

8. Group health insurance - coverage provided for families under group insurance plans. This coverage is provided by the employer for the employee (the employer often pays part or all of the cost for their employees).

   Individual health insurance - coverage provided for either one person or a single family. This type of polciy is selected when the kind of health insurance a family needs isn't made available through a group, or if additional coverage is needed. The employer seldom pays for this coverage for the employee.

9. a. worthless drugs
   b. food fads
   c. medical devices

10. Evaluated to the satisfaction of the instructor.

11. Evaluated to the satisfaction of the instructor.

HEALTH CARE FACILITIES AND AGENCIES
UNIT III

UNIT OBJECTIVE

After completing this unit, the student will be able to classify agencies and organizations according to their voluntary or official capacities, prepare to be a resource person and to research functions of an organization agency. The student will also be able to demonstrate an understanding of health care facilities in the U. S. **This knowledge will be evidenced by satisfactory completion of a unit test.**

SPECIFIC OBJECTIVES

After completing this unit, the student will be able to:

1. Classify agencies and organizations according to their voluntary or official capacities.
2. Match terms associated with agencies and organizations.
3. Research functions of an organization or agency.
4. Prepare to be a resource person.
5. List the types of health care facilities existing in the United States.
6. Name the two major classifications of hospitals.
7. Sketch the basic organizational structure of a health care facility.

HEALTH CARE FACILITIES AND AGENCIES
UNIT III

SUGGESTED ACTIVITIES

I. Suggested activities for the instructor:

  A. Provide students with objective sheet.

  B. Discuss unit and specific objective.

  C. Provide students with information sheet.

  D. Discuss information sheet

  E. Provide information for student to use in completing assignment sheets.

  F. Arrange for field trips to various agencies and health care facilities in your community.

  G. Invite resource people to speak to the class about the organizations they represent.

  H. Make or obtain a health care facility's organizational chart to display in the classroom. Use the chart to demonstrate the health care worker's place in the chain of command.

  I. Have students describe elements of five of the six departments of a hospital.

  J. Given a sketch of the organizational structure of a health care facility, have students indicate personnel at each level and the appropriate lines of authority.

  K. Discuss assignment sheets and provide materials.

  L. Give test.

II. Instructional materials:

  A. Objective Sheet

  B. Information Sheet

C. Assignment Sheets

  1. Assignment Sheet #1 - Research Functions of an Organization or Agency.

  2. Assignment Sheet #2 - Prepare to be a Resource Person.

D. Handouts

  1. Handout #1:
     Arkansas Health Agencies

  2. Handout #2:
     National Voluntary Health Agencies and Organizations

  3. Handout #3:
     Hospital Organizational Chart

E. Answers to Assignment Sheets

F. Test

G. Answers to Test

III. Unit references:

A. French, Ruth M., The Dynamics of Health Care. New York: McGraw-Hill Book Co., 1974.

B. Ulene, Art, and Feldman, Sandy, Help Yourself to Health. New York: G.P. Putman's Sons, 1980.

C. Oklahoma State Board of Vocational and Technical Education, Health Service Careers. Oklahoma: Curriculum and Instructional Materials Center, 1979.

D. Smolensky, Jack, and Haar, Franklin, B., Principles of Community Health. Philadelphia: W.B. Saunders Co., 1972.

E. Curriculum Guide for Health Occupations Education, Illinois Office of Education Department of Adult, Vocational and Technical Education.

IV. Additional resources:

A. "Community Health in Action." Arkansas Department of Health, Division of Public Health Education, 4815 West Markham, Little Rock, AR 72201.

HEALTH CARE FACILITIES AND AGENCIES
UNIT III

INFORMATION SHEET

I. Terms and definitions:

  A. Immunization--Method through which people can be protected from disease, especially infectious disease.

  (NOTE: Immunity can be natural, acquired, active, or passive.)

  B. Official/public agencies--Supported through public funds from government taxes and administered by appointees of the federal, state, or local government.

  C. Department of Health, Education, and Welfare (HEW)--Official federal agency that sets up and directs programs to help improve the conditions of life for each individual and as a national family.

  D. Social Security System--National system to provide health, old age, survivors, and disability insurance that cover all people who work outside the home for a living.

  E. Medicare--Health insurance plan promoted by the government to aid people age sixty-five or older.

  F. Social and Rehabilitation Services--Division of Health, Education, and Welfare organized to set up programs to aid handicapped and disabled individuals.

  G. Food and Drug Administration (FDA)--Administers and enforces many acts that promote purity, truthful, informative labeling of consumer products.

  Examples: Food, Drug and Cosmetic Act, Fair Packaging and Labeling Act, Caustic Poison Act.

  H. Public Health Service--Provides programs for research and gives grants to states for health services; provides training programs to improve health in local communities; offers medical and psychiatric examinations.

INFORMATION SHEET

I. State Health Department--Provides health education materials, including a film library, pamphlets, books, and folders on various health subjects.

(NOTE: The state health department may be responsible for licensing embalmers, manufacturers of narcotics and other controlled drugs, hospitals, nursing homes, and other agencies.)

J. Local Health Department--Provides many services to local communities, such as immunizations, reporting communicable diseases, public health nursing, health education, environmental sanitation, and maternal and child health services.

K. World Health Orgainzation (WHO)--Special agency of the United Nations that works throughout the world to raise health standards.

(NOTE: Control of communicable diseases is WHO's main goal.)

L. Private and voluntary health agencies--Organizations that receive support from sources such as United Fund, donations, gifts, endowments, membership fees, and sometimes public funds.

(NOTE: These agencies are usually administered by a board of directors who volunteer their services. They include the American Dietetic Association, American Medical Association, American Hosptial Association, and many others.)

M. Alcoholics Anonymous--Voluntary organization made up of former alcoholics who help other alcoholics help themselves.

(NOTE: Al-anon is a group that works with families of alcoholics and Alateen is primarily for the children of alcoholics. Both groups strive to learn how to live with the alcoholic but not to cure him/her; only the alchoholic can decide to quit drinking.)

N. American Cancer Society--Educates the public and supports facilities for the detection, diagnosis, and treatment of cancer.

INFORMATION SHEET

(NOTE: Groups form through the American Cancer Society to work with specific problem areas. Such groups include Reach to Recovery, Laryngectomy Club, and the Ostomy Club.

II. Voluntary and official agencies or organizations:

A. Voluntary

1. American Dietetic Association
2. American Medical Association
3. American Pharmaceutical Association
4. American Cancer Society
5. American Red Cross
6. American Diabetes Association
7. American Heart Association
8. National Association for Mental Health
9. Planned Parenthood
10. Parents Without Partners
11. Salvation Army

B. Official

1. Department of Health, Education, and Welfare
2. Social and Rehabilitation Services
3. Public Health Service
4. State and local health departments
5. World Health Organization

(NOTE: There are other agencies and organizations that deal with health care, but these are the well-known ones.)

INFORMATION SHEET

III. Health care facilities are those institutions or work settings in which direct or indirect health care and services are provided to the public.

Types of health care facilities:

1. Hospitals
2. Health maintenance organizations
3. Doctors' and dentists' offices
4. School health offices
5. Health offices in business and industry
6. Clinics
    a. Neighborhood
    b. Private
7. Nursing homes
8. Convalescent and rehabilitation centers
9. Home care services

IV. Organizational structure of health care facilities

1. Governing board
2. Administrative personnel
    a. Administrator
    b. Assistant Administrator
    c. Departmental directors
3. Health-care workers

V. Classifications of hospitals

1. Source of financial support or ownership: Government, voluntary, and proprietary hospitals. Government hospitals may be operated and supported by cities, states, or the federal government. A city or municipal hospital, a state psychiatric institution, or a Veterans Administration hospital are examples of government institutions.

    The voluntary hospitals are nonprofit institutions which are privately owned by religious or non religious groups.

INFORMATION SHEET

Proprietary hospitals are those which operate for profit. They are most often owned by a hospital chain corporation or a group of physicians. These hospitals are usually small and offer limited medical services.

2. Function (the type of patient and/or disease cared for)--the general or short-term hospital and the specialty or long-term care facility. The general hospital cares for patients with varying medical conditions which require diagnosis and surgical/medical treatment. Patients in these hospitals generally stay a short time-- a few days to a few weeks.

In specialty hospitals, patients are usually limited to those who have a specific illness or condition. Some of these hospitals are for psychiatric, chronic disease, and rehabilitation patients. These hospitals are also identified generally as "long term," since their patients are usually hospitalized for several months before they are discharged.

HEALTH CARE FACILITIES AND AGENCIES
UNIT III

ASSIGNMENT SHEET #1--RESEARCH FUNCTIONS OF AN ORGANIZATION OR AGENCY

Choose one of the organizations listed on the next page and gather information about its functions, funding, administration, and services offered. Collect pamphlets, obtain films, or have someone from the organization come speak to the class as a HOSA activity. Be sure you ask the following questions plus any additional information you find.

1. What is the main function of the organization?

2. Is it an official organization or a volunteer agency?

3. How is the organization funded?

4. Are the administrators appointed, voted in, or hired from public?

5. What services does the organization or agency provide?

6. What types of career opportunities are available in this agency or organization?

ASSIGNMENT SHEET #1

Below are some examples of organizations and agencies. You may select one of these or choose other interests:

1. State Health Department
2. Local Health Department
3. World Health Department
4. United Fund
5. Alcoholics Anonymous

   (NOTE: Anyone is welcome at an AA meeting; it is a good experience for anyone to see the excellent work that this organization does.)

6. American Cancer Society
7. Colostomy Club
8. Laryngectomy Club
9. Reach to Recovery
10. American Diabetes Association
11. American Red Cross
12. Association for the Aid of Crippled Children
13. Family Service Association
14. Muscular Dystrophy Association of America
15. National Association for Mental Health
16. National Council on Aging
17. National Rehabilitation Association
18. National Hemophilia Foundation
19. Parents Without Partners
20. Planned Parenthood
21. Salvation Army

22. United Cerebral Palsy Association
23. United Service Organizations
24. Visiting Nurse Association
25. Birthright
26. American Heart Association
27. American Lung Association
28. National Foundation of March of Dimes
29. Trauma Society

HEALTH CARE FACILITIES AND AGENCIES
UNIT III

ASSIGNMENT SHEET #2--PREPARE TO BE A RESOURCE PERSON

Using the knowledge you have gained about various agencies and organizations, answer the questions following each of the situations below. As a health worker, people will look to you for information when they need help and health care.

1. A new family moves into the neighborhood with several children ranging from about three months to preschool age. The mother asks you about immunizations for the children. They have moved several times in the last three years and haven't had time to find a doctor. Because of the move, their finances are rather tight.

   What agency would you suggest? ______________________

   ____

   What immunizations are available? ___________________

   ____

   Will there be a fee? ____________________________

   If so, what will it be? __________________________

2. A friend of your family is really having a rough time at home. The father is an alcoholic and is not working. The mother works two jobs, and there are younger children at home.

   What agency or organizations could be of help?

   ____

   ____

   What can be done to help this family? ______________

   ____

   ____

   ____

ASSIGNMENT SHEET #2

3. A close friend confides to you that she may be pregnant. She is afraid to tell her parents and does not know what to do or who to see.

   What agency or organization can help her?

   ____

   What can you tell her that might be of some help?

   ____

   ____

   ____

   ____

   ____

4. Billie was caught at school with drugs in his possession. He admits to you that he has been abusing hard drugs and wants to stop. His health is poor and he is making bad grades in school because he often skips. When he is there, he cannot concentrate.

   What agency or organization can help Billie?____________

   ____

   What can you tell him that might help?

   ____

   ____

   ____

   ____

ASSIGNMENT SHEET #2

5. A distant relative comes to your city with her fiance' and asks for your assistance. They want to get married and would like some counseling about birth control and genetics. Funds are low and they want to find a place to get blood tests and exams at low cost.

   What agency can help this couple?______________________

   ____

6. A classmate in your high school class confides to you that he may have a venereal disease. He doesn't want to go to the doctor because they will tell his parents. He tells you his symptoms, and you can see that he is very upset.

   What agency can help him?______________________________

   Is there a way he can be treated without parents' consent?

   ____

   ____

   How can you help him? ______________________________

   ____

   ____

   ____

HANDOUT #1

ARKANSAS HEALTH AGENCIES

1. The Arkansas Diabetes Association
   5422 West Markham
   Little Rock, AR 72201

2. Benton State Hospital Facility for Alcoholics
   Route 3, Box 225
   Benton, AR 72015

3. Baptist Medical Center
   Alcohol Treatment Program
   9601 I-630
   Little Rock, AR 72201

4. North Central Arkansas Mental Health Center
   P.O. Box 2578
   Batesville, AR 72501

5. Arkansas Foundation for Medical Care
   P.O. Box 1512
   Fort Smith, AR 72902

6. The Muscular Dystrophy Association
   1405 North Pierce
   Little Rock, AR 72207

7. Arkansas Lung Association
   412 West 7th
   Little Rock, AR 72201

8. Arkansas Heart Association
   909 West 2nd
   Little Rock, AR 72201

9. Arkansas Lighthouse for the Blind
   69th & Murray Street
   Little Rock, AR 72219

10. Arkansas Eye & Kidney Bank
    4301 West Markham
    Little Rock, AR 72205

11. Child Development Center
    12th & Marshall
    Little Rock, AR 72202

12. Arkansas State Spinal Cord Commission
4120 West Markham
Little Rock, AR 72205

13. American Cancer Society
5520 West Markham
Little Rock, AR 72201

14. The Arthritis Foundation
6213 Lee Avenue
Little Rock, AR 72205

15. Black River Area Development Council
114 East Everett
Pocahontas, AR 72455

16. Arkansas Foundation for Medical Care
P.O. Box 1512
Fort Smith, AR 72902

17. Arkansas Coalition for the Handicapped
1700 West 13th, Suite 349
Little Rock, AR 72202

18. Advocacy Services, Inc.
Medical Arts Building, Suite 504
12th & Marshall
Little Rock, AR 72202

19. American Amputee Foundation
1700 West 13th, Suites 350-351
Little Rock, AR 72202

20. Arkansas Association for Children with Learning Disabilities
P.O. Box 7316
2500 North Tyler
Little Rock, AR 72217

21. Arkansas Association of the Deaf
9005 Lew Drive
Little Rock, AR 72209

22. Arkansas Association for Hearing Impaired Children
2214 North Palm
Little Rock, AR 72207

23. Arkansas Association of Kidney Patients
521 South Cedar
Little Rock, AR 72205

24. Arkansas Association for Retarded Citizens
10110 West Marknam
Little Rock, AR 72205

25. Arkansas Environmental Barriers Council
P.O. Box 7601
Little Rock, AR 72217

26. Arkansas Epilepsy Society
4120 West Markham
Little Rock, AR 72201

27. Arkansas Handicapped Athletic Association
P.O. Box 55042, Hillcrest Station
Little Rock, AR 72205

28. Arkansas Rehabilitation Association
P.O. Box 3781
Little Rock, AR 72203

29. Arkansas State Chapter, National Society for Autistic Children
1700 West 13th
Little Rock, AR 72202

30. Arkansas Association of Human Development Centers
8312 Reymere Drive
Little Rock, AR 72207

31. Easter Seal Society, Inc.
P.O. Box 5148, Hillcrest Station
Little Rock, AR 72205

32. Mental Health Association in Arkansas, Inc.
1700 West 13th
Little Rock, AR 72202

33. National Federation of the Blind
Box 7
Little Rock, AR 72203

34. National Society to Prevent Blindness, Arkansas Affiliate
Southland Plaza Building, Suite 308
6th and McKinley
Little Rock, AR 72205

35. United Cerebral Palsy Association of Arkansas
1607 South Main
Little Rock, AR 72201

36. Bureau of Community Health Services/DHHS
Arkansas Department of Health
4815 West Markham Street
Little Rock, AR 72201

37. Camden Mental Health and Alcoholism Treatment Center
120 Jackson, S.W.
Camden, AR 71701

38. Central Arkansas Health Systems Agency
One Riverfront Drive, Suite 590
P.O. Box 530
North Little Rock, AR 72115

39. Human Services Center
1622 Donaghey
P.O. Box 1528
Conway, AR 72032

40. Human Services Center of West Central Arkansas, Inc.
319 South Commerce Street
P.O. Box 1398
Russellville, AR 72801

41. Magnolia Mental Health and Alcoholism Treatment Center
119 North Pine Street
Magnolia, AR 71753

42. Arkansas Medical Society
214 North 12th Street
P.O. Box 1208
Fort Smith, AR 72902

43. Arkansas Mental Health Services
4313 West Markham Street
Little Rock, AR 72201

44. Mental Retardation-Developmental Disabilities Services
Waldon Building
Seventh and Main Streets
Little Rock, AR 72201

45. Office on Aging and Adult Services
Donaghey Building, Suite 1428
Seventh & Main
Little Rock, AR 72201

46. Office on Alcohol and Drug Abuse Prevention
1515 West Seventh Street, Suite 300
Little Rock, AR 72202

47. Ouachita Regional Counseling and Mental Health Center
124 Rugg Street
P.O. Box 1106
Hot Springs, AR 71901

48. Ozark Regional Mental Health Center
Hospital Drive
P.O. Box 487
Mountain Home, AR 72653

49. Rural Health Development Office
Arkansas Department of Health
4815 West Markham Street
Little Rock, AR 72201

50. Scan Volunteer Service, Inc.
P.O. Box 7445
Little Rock, AR 72217

51. Arkansas Social Services
Blue Cross/Blue Shield Building
Seventh & Gaines
Little Rock, AR 72201

52. American Red Cross
401 South Monroe
Little Rock, AR 72201

53. Red River Regional Council on Alcoholism
P.O. Box 2644
811 Olive Street
Texarkana, U.S.A. 75501

54. Arkansas Rehabilitation Services
1401 Brookwood Drive
P.O. Box 3781
Little Rock, AR 72203

55. South Arkansas Health Systems Agency
P.O. Box 1917
El Dorado, AR 71730

56. Southeast Arkansas Mental Health Center
2500 Rike Drive
P.O. Box 1019
Pine Bluff, AR 71613

57. Southwest Arkansas Counseling and Mental Health Center
6800 North State Line
P.O. Box 1987
Texarkana, U.S.A. 75501

58. VA Hospital Alcoholism Program
Fort Roots
North Little Rock, AR 72114

59. West Arkansas Health Systems Agency
WC Subarea
624 Malvern
Hot Springs, AR 71901

60. Central Arkansas Planning and Development District
P.O. Box 187
Lonoke, AR 72086

61. White River Planning and Development District
P.O. Box 1010
Batesville, AR 72501

62. East Arkansas Planning and Development District
P.O. Box 1403
Jonesboro, AR 72401

63. Northwest Arkansas Economic Development District
P.O. Box 668
Harrison, AR 72601

64. Southeast Arkansas Economic Development District
P.O. Box 6806
Pine Bluff, AR 71601

65. West Central Arkansas Planning and Development District
P.O. Box 1558
Hot Springs, AR 71901

66. Western Arkansas Planning and Development District
510 North Greenwood Avenue
Fort Smith, AR 72901

67. Southwest Arkansas Planning and Development District
P.O. Box 767
Magnolia, AR 71753

68. North Central Arkansas Mental Health Center
P.O. Box 2578, 1800 Myers Street
Batesville, AR 72501

69. East Arkansas Family Health Center
215 East Bond
West Memphis, AR 72301

70. Jefferson Comprehensive Care Center
1515 West 42nd Street
Pine Bluff, AR 71603

71. Portland RHI Project
P.O. Box 242
Portland, AR 71663

72. Rural Health, Inc.
Lee County Cooperative Clinic
530 West Atkins
Marianna, AR 71601

73. CABUN Rural Health Services
P.O. Box 851
Hampton, AR 71744

74. Health Center of Pulaski County
P.O. Box 1174
Little Rock, AR 72203

75. Mid-Delta Community Services Rural Health Clinic
156 South 2nd Street
Clarendon, AR 72029

76. Rural Health, Inc.
One Medical Drive
Paragould, AR 72450

77. Crisis Center of Arkansas, Inc.
5904 West Markham Street
Little Rock, AR 72205

78. Crowley's Ridge Development Council
P.O. Box 1497
Jonesboro, AR 72401

79. East Arkansas Regional Mental Health Center
305 Valley Drive
Helena, AR 72342

80. Economic Opportunity Agency of Pulaski County, Inc.
2501 State Street
Little Rock, AR 72206

81. Arkansas Family Planning Council
1100 North University, Suite 143
Little Rock, AR 72207

82. Family Service Agency of Central Arkansas
2700 North Willow Street
P.O. Box 500
North Little Rock, AR 72215

HANDOUT #2

NATIONAL VOLUNTARY HEALTH AGENCIES AND ORGANIZATIONS

1. Administration on Aging
U. S. Department of Health, Education, & Welfare
Washington, DC 20203

2. Alcoholics Anonymous
337 East 33rd Street
New York, NY 10017

3. Alexander Graham Bell Association for the Deaf
1537 35th Street NW
Washington, DC 20007

4. Allergy Foundation of America
801 2nd Avenue
New York, NY 10017

5. Allied Youth, Inc.
Rouslyn Station
Arlington, VA 22209

6. American Cancer Society
219 East 42nd Street
New York, NY 10017

7. American Diabetes Association
18 East 48th Street
New York, NY 10017

8. American Foundation for the Blind
15 West 16th Street
New York, NY 10011

9. American Hearing Society
919 18th Street NW
Washington, DC 20006

10. American Heart Association, Inc.
44 East 23rd Street
New York, NY 10010

11. American Lung Association
1740 Broadway
New York, NY 10019

12. American National Red Cross
17th & D Streets NW
Washington, DC 20013

13. American Nursing Home Association
1025 Connecticut Avenue NW
Washington, DC 20036

14. American Podiatry Association
20 Chevy Chase Circle NW
Washington, DC 20015

15. American Social Health Association
1790 Broadway
New York, NY 10019

16. Arthritis Foundation
1212 Avenue of the Americas
New York, NY 10036

17. Cleveland Health Museum
8911 Euclid Avenue
Cleveland, OH

18. Epilepsy Foundation
1828 L Street NW
Washington, DC 20036

19. Leukemia Society of America, Inc.
211 East 43rd Street
New York, NY 10017

20. Maternity Center Association
48 East 92nd Street
New York, NY 10028

21. Mental Health Materials Center, Inc.
419 Park Avenue South
New York, NY 10010

22. Muscular Dystrophy Association of America, Inc.
1740 Broadway
New York, NY 10019

23. National Association for Mental Health, Inc.
420 Lexington Avenue
New York, NY 10017

24. National Clearing House for Drug Abuse Information
National Institute of Mental Health
5600 Fishers Lane
Rockville, MD 20852

25. National Cystic Fibrosis Research Foundation
3379 Peachtree Road NE
Atlanta, GA 30328

26. National Dairy Council
111 North Canal Street
Chicago, IL 60606

27. National Kidney Foundation
116 East 27th Street
New York, NY 10016

28. National Foundation
PO Box 2000
White Plains, NY 10602

29. National Health Council
1740 Broadway
New York, NY 10019

30. National Hemophilia Foundation
25 West 39th Street
New York, NY 10018

31. National Multiple Sclerosis Society
257 Park Avenue South
New York, NY 10010

32. National Safety Council
425 North Michigan Avenue
Washington, DC 10017

33. National Society for Crippled Children and Adults, Inc.
2023 West Ogden Avenue
Chicago, IL 60612

34. National Society for the Prevention of Blindness
79 Madison Avenue
New York, NY 10016

35. National Tuberculosis Association
1790 Broadway
New York, NY 10019

36. Parkinson's Disease Foundation
New York Neurological Institute
710 West 168th Street
New York, NY 10032

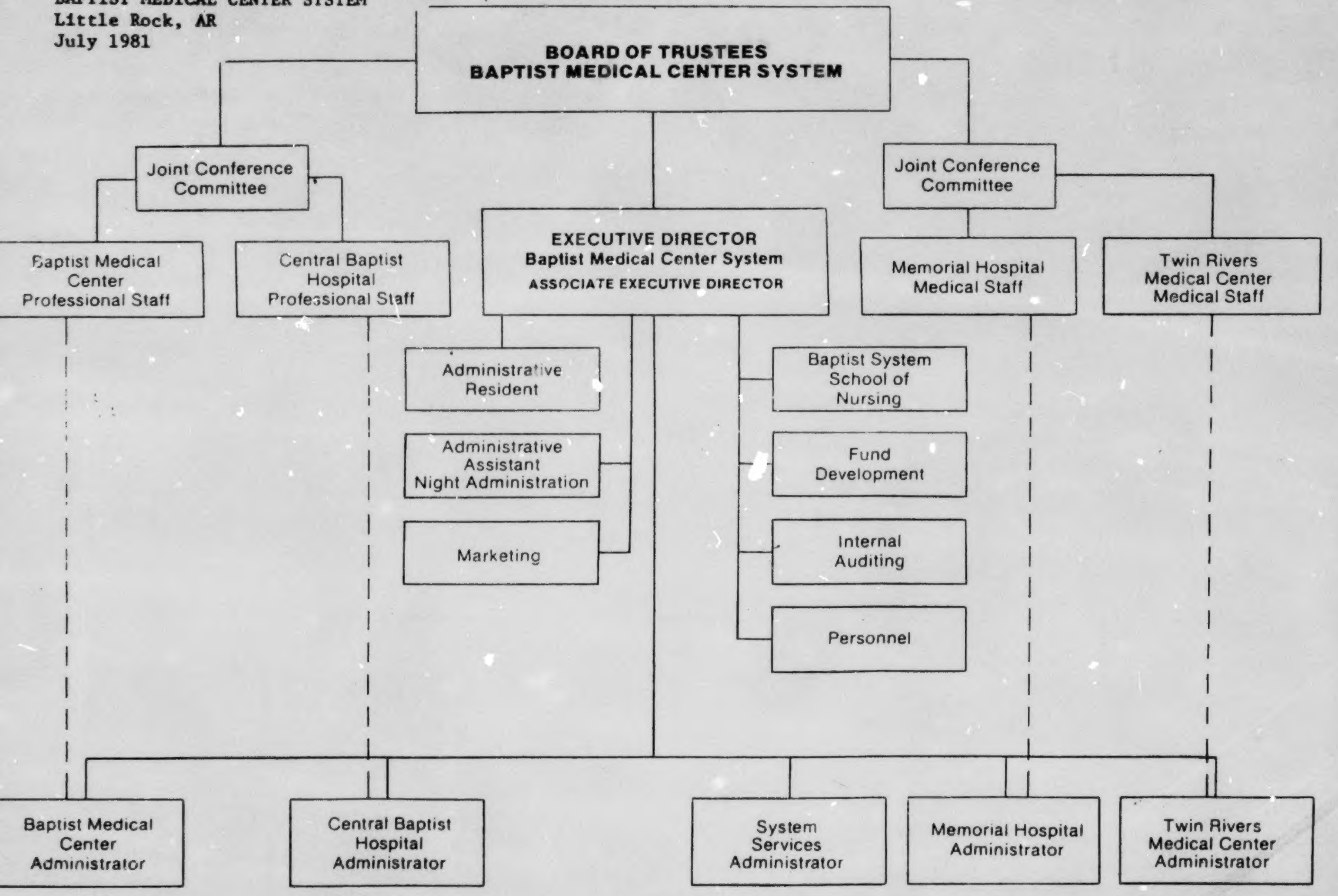
37. Planned Parenthood Federation of America
810 Seventh Avenue
New York, NY 10022

38. United Cerebral Palsy Association
66 East 34th Street
New York, NY 10016

HANDOUT

HOSPITAL ORGANIZATIONAL CHART

BAPTIST MEDICAL CENTER SYSTEM
Little Rock, AR
July 1981


BOARD OF TRUSTEES
BAPTIST MEDICAL CENTER SYSTEM
Joint Conference Committee
Joint Conference Committee
Baptist Medical Center Professional Staff
Central Baptist Hospital Professional Staff
EXECUTIVE DIRECTOR
Baptist Medical Center System
ASSOCIATE EXECUTIVE DIRECTOR
Memorial Hospital Medical Staff
Twin Rivers Medical Center Medical Staff
Administrative Resident
Administrative Assistant Night Administration
Marketing
Baptist System School of Nursing
Fund Development
Internal Auditing
Personnel
Baptist Medical Center Administrator
Central Baptist Hospital Administrator
System Services Administrator
Memorial Hospital Administrator
Twin Rivers Medical Center Administrator

sed by permission of Baptist Medical Center System, Little Rock, Arkansas.

HEALTH CARE FACILITIES AND AGENCIES
UNIT III

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1 - Evaluated to the satisfaction of the instructor

Assignment Sheet #2 - Evaluated to the satisfaction of the instructor

HEALTH CARE FACILITIES AND AGENCIES
UNIT III

TEST

NAME____ SCORE____________

1. Classify the agencies and organizations below according to their voluntary or official capacities by placing a "V" for voluntary and an "O" for official in the appropriate blanks.

_____a. Salvation Army

_____b. American Dietetic Association

_____c. Department of Health, Education, and Welfare

_____d. State and local health departments

_____e. American Medical Association

_____f. Parents Without Partners

_____g. World Health Organization

_____h. Planned Parenthood

_____i. Public Health Service

_____j. American Cancer Society

_____k. American Red Cross

_____l. American Diabetes Association

_____m. Social and Rehabilitation Services

_____n. American Pharmaceutical Association

_____o. National Association for Mental Health

TEST

2. Match terms associated with community health to their correct definitions by placing the correct numbers in the appropriate blanks.

_____a. Health insurance plan promoted by the government to aid people age sixty-five or older

_____b. National system to provide health, old age, survivors' and disability insurance that cover all people who work outside the home for a living

_____c. Administers and enforces many acts that promote purity and truthful and informative labeling of consumer products

_____d. Voluntary organization made up of former alcoholics who help other alcoholics to help themselves

_____e. Provides health education materials, including a film library, pamphlets, and books and folders on various health subjects

_____f. Method through which people can be protected from disease, especially infectious disease

_____g. Provides many services to local communities, such as immunizations, reporting communicable diseases, public health nursing, health education, environmental sanitation, and maternal and child health services

_____h. Division of Health, Education, and Welfare organized to set up programs to aid handicapped and disabled individuals

1. State health department
2. Social Security System
3. Social and Rehabilitation Services
4. Food and Drug Administration (FDA)
5. Immunization
6. Medicare
7. Alcoholics Anonymous
8. Local health department

TEST

3. List the types of health care facilities existing in the U.S.

4. Name the two major classifications of hospitals.

5. Sketch the basic organization structure of a health care facility.

(NOTE: Activities covered by assignment sheets in unit to be completed prior to the test (if not completed, ask the instructor when they should be completed.)

6. Research functions of an organization or agency.

7. Prepare to be a resource person.

HEALTH CARE FACILITIES AND AGENCIES
UNIT III

ANSWERS TO TEST

1. a. V

   b. V

   c. O

   d. O

   e. V

   f. V

   g. O

   h. V

   i. O

   j. V

   k. V

   l. V

   m. O

   n. V

   o. V

2. a. 6

   b. 2

   c. 4

   d. 7

   e. 1

   f. 5

   g. 8

   h. 3

3. 1. Hospitals

   2. Health maintenance organizations

   3. Doctors' and dentists' offices

   4. School health offices

   5. Health offices in business and industry

   6. Clinics
      a. Neighborhood
      b. Private

   7. Nursing Homes

   8. Convalescent and rehabilitation centers

   9. Home care services

ANSWERS TO TEST

4. a. Source of financial support or ownership

   b. Function -- the type of patient and/or disease cared for.

5. Evaluated to the satisfaction of the instructor.

6. Evaluated to the satisfaction of the instructor.

7. Evaluated to the satisfaction of the instructor.

HEALTH CAREERS
UNIT IV

UNIT OBJECTIVE

After completing this unit, the student will be able to name the sixteen major health career fields and advantages of being a health worker. The student will be able to develop an understanding of the team approach to health care. The student will also be able to explore a chosen health career in each of the 16 health career fields. This knowledge will be evidenced by satisfactory completion of a unit test.

SPECIFIC OBJECTIVES

After completing this unit, the student will be able to:

1. Name the advantages of being a health worker.
2. State the difference between licensure and certification.
3. Name the two types of teams in health delivery.
4. Identify the three patient-centered teams.
5. Name the 16 major health career fields.
6. Identify health fields and occupations.
7. Explore a health career in each of the 16 health career fields.
8. Demonstrate the ability to:
    a. Make and stain a blood smear
    b. Use the proper technique to brush and floss teeth
    c. Wash hands using the aseptic technique
    d. Use the stethoscope
    e. Show the proper use of the syringe
    f. Measure patient height and weight
    g. Disinfect drinking water
    h. Take a blood pressure
    i. Show proper use of crutches and wheelchairs

HEALTH CAREERS
UNIT IV

SUGGESTED ACTIVITIES

I. Suggested Activities for the instructor:

   A. Provide students with objective sheet.

   B. Discuss unit and specific objectives.

   C. Provide students with information sheet.

   D. Discuss information sheet.

   E. Discuss assignment sheets.

   F. Demonstrate and discuss procedures outlined in job sheets.

   G. Provide information for students to use in completing assignment sheets.

   H. Invite resource people from different health occupations to speak to class.

   I. Role play different occupations giving students assignments and have them create appropriate costumes and a script.

   J. Tour hospital and have students draw a diagram of the different departments, giving job descriptions for the jobs contained in each department.

   K. Have the class make a file on each health care field.

   L. Give test.

II. Instructional materials:

   A. Objective sheet

   B. Information sheet

   C. Assignment sheets

      1. Assignment Sheet #1 - Exploring Health Careers

D. Answers to Assignment Sheets

E. Job Sheets

1. Job Sheet #1 - Make and stain a blood smear
2. Job Sheet #2 - Proper techniques to brush and floss teeth
3. Job Sheet #3 - Aseptic technique for hand washing
4. Job Sheet #4 - Proper use of the stethoscope
5. Job Sheet #5 - Proper use of the syringe
6. Job Sheet #6 - Measure patient height and weight
7. Job Sheet #7 - Disinfection of drinking water
8. Job Sheet #8 - Take blood pressure
9. Job Sheet #9 - Proper use of crutches and wheelchairs

F. Test

G. Answers to Test

III. Unit References:

A. Milles, George. Health Careers and Medical Sciences. Indianapolis, Indiana: The Bobbs-Merrill Co., Inc., 1975.

B. Lee, Ruth M. Orientation to Health Services. Indianapolis, Indiana: The Bobbs-Merrill Co., Inc., 1978.

C. Arns, Kathleen F., and Watson, Diane E. Exploring Health Occupations. New York: Mc-Graw-Hill, 1976.

D. U. S. Dept. of Labor and U. S. Dept. of Health, Education and Welfare. Health Careers Guidebook. U. S. Government Printing Office, 1979.

E. Arkansas Department of Higher Education. Postsecondary Educational Opportunities in Arkansas--Directory 1981-1982.

F. Allen, Anne S. Introduction to Health Professions. St. Louis: The C. V. Mosby Company, 1976.

IV. Additional resources:

1. Arkansas Department of Education, Audio-Visual Service. "Is a Career in the Health Services for You?" Little Rock, Arkansas.

2. Arkansas Department of Education, Audio-Visual Service. "Careers in Health Care." Little Rock, Arkansas.

3. Films available from: The Arkansas Department of Health
Division of Public Health Education
4815 West Markham Street
Little Rock, AR 72201

O 104 "Journey in Health"
O 106 "Mental Health Careers"
O 119 "What is School Health"
T 120 "Dental Assistant - A Career of Service"
C 144 "Measuring Blood Pressure"
I 127 "Taking Blood Pressure"
K 112 "Hospital Food Services"

HEALTH CAREERS
UNIT IV

INFORMATION SHEET

I. Advantages of Being a Health Worker

A. Variety of work

(NOTE: Health care professions are expanding every day as new equipment, new techniques, and new treatments are found to eliminate and treat disease.)

B. Professional pride

(NOTE: There is a certain amount of prestige in being a health professional, and many people look to you for answers to questions concerning health. You have an opportunity to teach good health practices.)

C. Availabilty of work and geographic mobility

(NOTE: Demand exceeds supply at this time; work for the health service person is always available at many different types of facilities in many locations.

D. Advancement

(NOTE: In almost all of the health professions, there is upward mobility. Using the education and skills already learned as a base, a career reaching higher levels can be built.)

E. Salary and benefits

(NOTE: Wages earned as a health service worker are stable and promotions with raises occur every three to six months in most areas. Benefits may include health insurance, discount on all health care by professionals, and some institutions have retirement and savings plans for their employees.)

F. Excellent work environment

(NOTE: Health institutions are very clean and have a very pleasant atmosphere. Co-workers in all health areas work as an efficient team to provide the best health care possible.)

INFORMATION SHEET

II. Licensure, certification and registration.

Licensure: Before you can work in many health professions, a state license is required. The qualifications for licensure vary. In general, a student must graduate from a school whose program is approved by the state licensing agency, then prove he or she is qualified to give health services by passing a special licensing examination. Licensure is the state's way of protecting the public from unqualified health practitioners.

The health professions which are licensed vary with each state. Some professions like registered nurse, practical nurse, physician, dentist, optometrist, podiatrist, pharmacist, and veterinarian are licensed in all States. The individual state licensing agencies vary, too. The State Education Department, Department of Higher Education, or Department of Health are usually the responsible agencies. Licensing may also be done jointly by a state agency and a state specialty Board of Nursing, Dentistry, etc.

Professional Certification: Professional certification insures that health professionals meet established levels of competency. Certification is granted by the national health professions organizations, not the individual states. so it has national recognition. In health professions where there is no state licensure, professional certification may be required for employment. But even when not required, it is a strong employment asset. Most employers prefer to hire certified professionals, and in a tight job market certification may be the key to getting a job.

In general, to qualify for certification, a student must first complete a program of training recognized by the profession. Usually this means graduating from a school whose program is accredited (approved) by the organization. Some organizations accredit programs jointly with the American Medical Association (AMA); then, the student must pass a special certification examination.

Professional Registration: Technically, registration means the listing of certified health professionals on an official roster kept by a state agency or health professions organization. In practical terms, some health professions organizations use "registration" interchangeably with "certification."

INFORMATION SHEET

III. Team Approach to Health Care

It is impossible for a single health worker to deliver the ultimate in health care--one person cannot know all there is to know about medicine and its related technologies and even if this were possible, there would be neither the time nor the energy to apply this knowledge. So, the concept of the health care team was developed. Teams change--they continually dissolve, and members regroup to meet special problems.

"The team" in health care does not exist. Instead, there are a large number of health teams dedicated to varying purposes. The purpose of a team approach is to make as effective as possible the contribution in skills and knowledge of the team members so that the needs of the persons served can be met more efficiently, competently, and more considerately than would be possible by independent and individual action.

Two Types of Teams:

A. Functional - those teams whose members depend on the nature of the problem (for example, the coronary care team, the mental health team, etc.)

B. Patient-centered - those teams which are made up in terms of closeness of patient contact.

   1. Patient care team - these are the health workers who lay hands directly on the patient, have the most sustained contact with the patient. (Examples are doctors, nurses, therapists, etc.)

   2. Medical care team - these are the health workers who provide back-up services for the patient care teams. They are not in close continued contact with the patient--they deal with part of the patient. (Examples are pathologists, radiologic technologists, medical technologists, pharmacists, etc.)

   3. Health care team - these are the health workers who are the most distantly related to the patient and have as their concern the entire community. They concentrate on the delivery of all services, their availability, the costs of care, the production of manpower. (Examples are public health officers, hospital administrators, health educators, sanitarians, bio-medical engineers, etc.)

INFORMATION SHEET

IV. PROFESSIONAL ORGANIZATIONS

1. American Academy of Pediatrics
1801 Hinman Avenue
Evanston, IL 60201

2. American Association for Health, Physical Education and Recreation
1201 16th Street NW
Washington, DC 20036

3. American Association for Respiratory Therapy
1720 Regal Row
Dallas, TX 75235

4. American College of Hospital Administrators
840 North Lake Shore Drive
Chicago, IL 60611

5. American Dental Association
211 East Chicago Avenue
Chicago, IL 60611

6. American Dental Hygienists' Association
211 East Chicago Avenue
Chicago, IL 60611

7. American Dietetic Association
430 North Michigan Avenue
Chicago, IL 60611

8. American Home Economics Association
1600 20th Street NW
Washington, DC 20009

9. American Hosptial Association
840 North Lake Shore Drive
Chicago, IL 60611

10. American Medical Association
535 North Dearborn Street
Chicago, IL 60610

11. American Nurses Association
2420 Pershing Road
Kansas City, MO 64108

INFORMATION SHEET

12. American Occupational Therapy Association
600 Executive Boulevard
Suite 200
Rockville, Maryland 20852

13. American Physical Therapy Association
1156 15th Street NW
Washington, DC 20005

14. American Public Health Association
1740 Broadway
New York, NY 10019

15. American School Health Association
Secretary's Office
200 East Main Street
Kent, OH 44240

16. American Society for Medical Technology
5555 West Loop South, Suite 200
Bellaire, TX 77401

17. American Society of Radiologic Technologists
55 East Jackson Street
Suite 1820
Chicago, IL 60604

18. American Speech-Language-Hearing Association
10801 Rockville Pike
Rockville, MD 20852

19. Association of Medical Illustrators
Davis-Flash-Replogle, & Associates
5820 Wilshire Boulevard
Suite 500
Los Angeles, CA 90036

20. National Association of Sanitarians
Lincoln Building, Room 208
1550 Lincoln Street
Denver, CO 80203

21. National Association of Social Workers, Inc.
600 Southern Building
15th & "H" Streets
Washington, DC 20005

22. National Education Association
1201 16th Street NW
Washington, DC 20036

INFORMATION SHEET

23. Public Health Service
    Health Resources Statistics
    Washington, DC

24. Society of Public Health Educators
    419 Park Avenue South
    New York, NY 10016

25. The American Medical Records Association
    875 North Michigan Avenue
    Suite 1850
    Chicago, IL 60611

26. American Academy of Physician Assistants
    The Gelman Building
    2120 "L" Street N.W.
    Washington, D.C. 20005

27. Nurse-Midwife
    American Nurses' Association
    Committee on Nursing Careers
    2420 Pershing Road
    Kansas City, Missouri 64108

28. Music Therapist
    National Association for Music Therapy, Inc.
    P.O. Box 15
    Lawrence, Kansas 66044

29. Recreational Therapy
    National Therapeutic Recreation Society
    c/o National Recreation and Park Association
    1601 North Kent Street
    Arlington, Virginia 22209

30. Veterinary
    American Veterinary Medical Association
    930 North Meacham Road
    Schaumburg, Illinois 60196

31. Pharmacy
    American Pharmaceutical Association
    2215 Constitution Avenue N.W.
    Washington, D.C. 20037

32. Dance Therapy
    American Dance Therapy Association
    2000 Century Plaza, Suite 230
    Columbia, Maryland 21044

INFORMATION SHEET

V. The 16 major areas in the health career field:

A. Clinical Laboratory Service

B. Dentistry

C. Dietetics and Nutrition

D. Education

E. Health Information and Communication

F. Health Services Administration

G. Medicine

H. Nursing

I. Pharmacy

J. Psychology

K. Science and Engineering

L. Social Work

M. Technical Instrumentation

N. Therapists

O. Veterinary Medicine

P. Vision Care

VI. Clinical Laboratory Services

There are illnesses that cause changes in the body fluid and tissues which are not noticed by observation. To detect these, the physician must send specimens of blood, urine, or tissue for a variety of highly technical tests performed in the laboratory.

Although physicians need the results of these tests for evaluation and diagnosis, they do not conduct the tests themselves. Instead, these tests are made by clinical laboratory personnel.

Basic Job Titles:
Medical Laboratory Scientist
Medical Laboratory Assistant
Microbiology Technologist
Public Health Laboratory Scientist
Certified Laboratory Assistant
Medical Laboratory Technician
Blood Bank Technologist
Hematology Technologist
Chemistry Technologist
Clinical Chemist
Cytotechnologist
Histologic Technician
Medical Technologist

INFORMATION SHEET

Specific Medical Technologist Specialities

1. Certified Lab Assistant - Performs routine lab procedures in bacteriology, blood banking, chemistry, hematology, parasitology, serology, and urinalysis.

2. Cytotechnologist - Performs special lab techniques for detecting body-cell changes.

3. Blood-bank Technologist - Collects blood from donors, classifies, processes, and stores blood for instant availability.

4. Electrocardiograph Technician - Uses the electrocardiograph to determine the status of patient's heart and circulatory system.

5. Nuclear Medical Technologist - Concerned with the use of radioactive isotopes to diagnose disease.

Terms and Definitions

1. Urinalysis - Physical, chemical and microscopic examination of urine.

2. Hematology - The study of the blood and its derivatives as to their functions, disorders, and disease.

3. Microbiology - The study of organism structure and functions through a microscope.

4. Serology - The study of properties and actions of blood serum.

5. Parasitology - The study of parasites and their effects on their hosts.

6. Clinical chemistry - branch of clinical medicine involved in studying body fluids and substances for the diagnosis of disease.

7. Blood banking - branch of clinical medicine which processes blood for transfusion; immunohematology.

INFORMATION SHEET

VII. Dentistry

Dentistry, as a branch of the health profession, emphasizes not only treatment, but also prevention of problems associated with the hard and soft tissues of the mouth.

Basic job titles:
Dental Assistant
Dental Hygienist
Dental Laboratory Technician
Dentist

Specific Dental Specialties

1. Dental Public Health - Control and prevention of dental diseases of the mouth through study of causes, processes, and effects.

2. Oral Pathology - Concerned with nature of diseases of the mouth through study of causes, processes and effects.

3. Oral Surgery - Diagnostic, operative, and related services dealing with diseases, injuries, and defects in the jaws and related structures.

4. Orthodontics - Treatment of irregular dental development, missing teeth, and other abnormalities to establish normal functioning and appearance.

5. Pedodontics - Specialty for treatment of children and adolescents.

6. Periodontics - Concerned with gums and parts of jaw bones that support teeth.

7. Endodontics - Branch of dentistry concerned with the causes, diagnoses, prevention and treatment of diseases of the pulp and other dental tissues affecting teeth.

8. Prosthodontics - Branch of dentistry concerned with replacing missing natural teeth and associated structures with fixed and removable substitutes.

Specific Dental Hygienist Specialties

1. Public Health Dental Hygienist - Works for local or federal government conducting oral hygiene education programs for community.

2. Industrial Dental Hygienist - Cleans teeth and advises on periodic care.

INFORMATION SHEET

VIII. Dietetics and Nutrition

Human nutrition is the science of food and its effect on the human body. It is concerned with the nutrients in food, their use in body chemistry and physiology, and,in the final analysis; with the wide range of relationships of food to maintaining or restoring health.

Basic job titles:

Dietetic Assistant
Dietetic Technician
Dietetic Aide
Dietitian
Food Technologist
Home Economist
Nutritionist
Food Service Supervisor
Food Scientist
Food and Drug Inspector

Specific Dietetic Specialties

1. Dietetic Technician - Involved directly in food administration and nutrition care services.
2. Dietetic Assistant - Concerned with day-to-day food services operation, such as ordering food and supplies, supervising employees, and training new workers.
3. Dietetic Clerical Worker - Assist the dietitian with paperwork general secretarial and clerical duties, typing of menus, recipes, etc.
4. Dietetic Worker - The person involved directly with food preparation, storing, cooking and serving, as well as dishwashing and kitchen cleaning.

Terms and Definitions

1. Nutrition - All processes, taken together, by which plants and animals take in and utilize food material.
2. Digestion - The process in the alimentary canal by which food is converted into a suitable substance for absorption and assimilation into the body.
3. Carbohydrates - A class of organic compounds containing the starches and sugars that form the supporting tissues of plants and are important food for animals and man.
4. Calorie - A unit of measurement of the heat output of an organism and the fuel or energy value of food.
5. Protein - A substance of organic compounds used by plants and animals that are required for the building of life processes in animals.

INFORMATION SHEET

6. Fats - Any of several greasy substances composed of carbon, hydrogen, and oxygen that form the chief part of adipose tissue of animals.

7. Diet - That which you eat and drink.

IX. Education

The health field offers a variety of career opportunities to persons interested in education.

Basic job titles:
Community/Public Health Educator
Educational Therapist
Orientation and Mobility Instructor for the Blind
Rehabilitation Teacher
School Health Educator
Teacher of the Visually Handicapped
Allied Health Educator

Terms and Definitions

1. Community Health Educator - The main function of a community health educator is to give people the facts about health, the causes of disease, and methods of prevention so they will act for their own well-being and that of their families. The ultimate goal of the health educator is to persuade the person being educated to take the necessary steps for preservation of health or safety.

2. Rehabilitation Teacher - These are specialists who provide instruction and guidance to visually impaired individuals. They develop plans of instructions which allow their clients to carry out daily activities, develop independence, and achieve satisfactory ways of living.

3. School Health Educator - They help children and young people develop the knowledge, attitudes, and skills they need to live healthfully and safely. They work closely with the school's physician and nurse, as well as teachers and service personnel.

X. Health Information and Communication

Today, the general public has a strong interest in health, medicine, and science and desires information about them. People want to understand what is happening and how new developments will affect their lives. Advanced communication technology has made delivery of this knowledge possible, and the publishing and broadcast media provide their audiences with both oral and written materials in these fields.

INFORMATION SHEET

Basic job titles:

- Biological Photographer
- Health Sciences Librarian
- Medical Illustrator
- Medical Writer
- Medical Photographer
- Health Information Specialist
- Health Sciences Library Technician
- Medical Record Administrator
- Medical Record Technician
- Medical Transcriptionist
- Medical Computer Specialist

Terms and Definitions

1. Communication - The act or process of interchange of thoughts, opinions, or information by speech, writing, or audio-visual media.

2. Illustration - An exemplary picture, verbal or graphic, used to clarify information.

3. Linguistics - The science of language, including phonetics, phonology, grammar.

XI. Health Services Administration

The field of health services administration offers a wide range of challenging career opportunities to men and women interested in the health profession. The challenge lies in developing and administering health care systems which provide the best possible medical and health services to the greatest number of people.

Basic job titles:

- Health Services Administrator
- Medical Secretary
- Controller/Business Manager
- Personnel Director
- Director of Volunteer Services
- Director of Staff Services
- Purchasing Agent
- Executive Housekeeper
- Director of Training Programs
- Director of Plant Operations

Terms and Definitions

1. Health Services Administrator - They plan, organize, coordinate, and evaluate the services and resources needed to provide health and medical care to patients in a health facility. The responsibilities of the administrator varies but he/she works under the authority of a governing board.

INFORMATION SHEET

2. Medical Secretary - Their responsibilities are limited to administrative and clerical duties, and they are not trained to assist physicians with clinical or laboratory tasks. Medical secretaries are mainly responsible for the orderly, efficient operation of the office.

3. Executive Housekeeper - These people are in charge of keeping the institution clean and sanitary. They are responsible for scheduling housekeepers, making sure the job is done properly, and training of new personnel.

XII. Medicine

Medicine, the practice of healing, is one of the oldest professions. There are many different professions involved in the practice of medicine and also preventive medicine.

Basic job titles:

Chiropractor
Medical Assistant
Physician
Podiatrist
Veterinarian
Emergency Medical Technician
Operating Room Technician
Physician's Assistant
Podiatric Assistant
Osteopathic Doctor

Specific Fields of Medical Doctors

1. General Practice - Usually treatment of the whole person.

2. Psychiatrics - Usually treatment of emotional and mental diseases.

3. Gynecology and Obstetrics - Care of female reproductive organs (including care during and after pregnancy).

4. Pediatrics - Treatment of children's diseases.

5. Geriatrics - Treatment of diseases of the elderly.

6. Orthopedics - Treatment of diseases, deformities, and fractures of bones and joints.

Terms and Definitions

1. Cardiovascular - Pertains to the heart and blood vessels.

2. Lymphatic - Of or related to the lymph gland, a small transparent vessel that carries fluid called lymph that screens or filters foreign items within the body.

INFORMATION SHEET

3. Endocrine - Pertains to the glands within the body that maintain physical and mental well-being of the individual; e.g., thyroid, parathyroid, pituitary, thymus, pineal, testes and ovaries, adrenal.

4. Organs - Those structures within the body that regulate body metabolism; e.g., bladder, heart, intestines, liver, kidney, pancreas, spleen, stomach, spinal cord, trachea.

5. Cardiology - The study of heart disorders.

6. Dermatology - The study of skin diseases.

7. Neurology - The study of diseases of the nervous system.

8. Urology - The study of diseases of the urinary tract.

XIII. Nursing

In the field of health, nursing plays a vital role in providing essential services to individuals and families in health-care facilities, schools, at play, and on-the-job. Caring for the sick is not the only function of a nurse, but also prevention of illness and the promotion of health in general.

Basic job titles:

Homemaker-Home Health Aide
Licensed Practical Nurse
Nurse's Aide (Assistant)
Public Health Nurse
Nurse Anesthetist
Nurse-Midwife
Nurse Practitioner
Registered Nurse

Specific Registered Nurse Specialties

1. Nurse Anesthetist - Administer anesthetics to render persons insensible to pain during operations and deliveries.

2. Doctor's Nurse - An office employee of a physician who works under his direction and may also perform secretarial and lab work.

3. Surgical Nurse - Works in operating rooms of hospitals, concerned mainly with preparation of surgical equipment and supplies and aiding surgeon during surgery.

4. Obstetrical Nurse - Works in delivery room assisting a doctor during and after deliveries.

5. Pediatrics Nurse - Works in children's ward in hospital or for a physician specializing in treating children.

INFORMATION SHEET

6. Geriatrics Nurse - Works in the area of care and treatment of aged.

7. Psychiatric Nurse - Works under doctors attending patients who are suffering from nervous or mental disorders.

8. Public Health Nurse - Gives nursing services to patients in homes and clinics, and instructs lay persons in health education and disease prevention.

XIV. Pharmacy

To most of us, pharmacists are persons who prepare and dispense medicines prescribed by physicians, and, of course, this is their primary professional function. As highly trained experts in the science of drugs, pharmacists are vital members of the public health team.

Basic job titles:
Pharmacist
Pharmacologist
Pharmaceutical Sales Representative
Pharmacy or Drug Store Sales Person

Terms and Definitions

1. Pharmacy - (basic meaning) The art or practice of making drugs, preserving them, and of putting together and dispensing medicines.

   Pharmacy - (popular meaning) The place where drugs and medicines are stored, put together, and dispensed; a drug store, or an apothecary's place of business.

2. Pharmaceutics - Another word for the basic meaning of "pharmacy," but carrying with it the idea of the science of making or compounding drugs.

3. Pharmacist - The title of the job held by a person who performs pharmacy or pharmaceutics; i.e., who compounded drugs.

4. Pharmacologist - The name of the occupation held by a person who studies, tests, and/or does research on drugs and their effects on living organisms.

INFORMATION SHEET

XV. Psychology

Psychology focuses on all aspects of human behavior, both normal and abnormal. It involves a scientific approach to gathering,quantifying, analyzing, and interpreting data on why people act as they do.

Basic job titles:

Mental Health Assistant
Mental Health Associate
Mental Health Worker
Psychiatric/Mental Health Technician
Psychologist
Human Service Worker
Licensed Psychiatric Technician

Areas of Specialization

Clinical Psychology
Counseling Psychology
Developmental Psychology
Educational Psychology
Engineering Psychology
Personnel Psychology
Experimental Psychology
Industrial Psychology
Psychometric Psychology
Rehabilitation Psychology
School Psychology
Social Psychology

Terms and Definitions

1. Psychiatric/Mental Health Technician - They provide professional care and treatment to mentally ill and developmentally disabled individuals in a wide range of mental health programs. They work with, care for, and take direct charge of patients with various kinds of disabilities, including psychotic and emotionally disturbed adults, adolescents, and children. Psychiatric/mental health technicians function under the supervision of a psychiatrist, psychologist or others.

2. Psychologist - They study the behavior of individuals or groups to understand the fundamental process of human behavior. Some psychologists deal with psychological testing, counseling and therapy, or adjustment problems. There are a number of specialties that a psychologist can go into.

XVI. Science and Engineering

There are two basic types of scientific occupations that are associated with the health field: occupations concerned with pure scientific research and occupations that use scientific knowledge to detect and identify disease, disorder, or other changes in the body and its functions; or in social-environmental conditions that affect the health of the individual and society in general.

INFORMATION SHEET

Basic job titles:
Biomedical Engineer
Environmental Engineer
Industrial Hygienist
Sanitarian
Biomedical Equipment Technician
Environmental Health Technician
Medical Research Scientist

Terms and Definitions

1. Biomedical Engineer - They design and build medical instruments and devices such as artificial kidneys, joints, and cardiac pacemakers. They also study such materials as silicone, plastic, and stainless steel to determine whether the body will tolerate them. Biomedical engineers adapt computers to medical science and diagnostic methods as well.

2. Sanitarian - The sanitarian is responsible for controlling, preserving, or improving environmental conditions so that health, safety, comfort, and well-being may be achieved for this and future generations. The sanitarian's basic duty is interpretation and enforcement of city, state, federal, or other laws regarding sanitary standards, in food, water supply, garbage disposal, sewage disposal, and housing maintenance.

3. Industrial Hygienist - The industrial hygienist has three different functions: Recognizing hazards and detecting their development promptly; evaluating their seriousness, and prescribing methods of eliminating or controlling them. Industrial hygienist may urge some drastic changes in a process or sometimes in an entire plant where unsafe conditions are found to exist.

XVII. Social Work

Social work in the health field involves programs and services that meet the special needs of the ill, disabled, elderly, or otherwise handicapped. Social workers deal with the total emotional, social, cultural, and physical needs of patients in whom the effects of illness go far beyond bodily discomfort.

Basic job titles:
Social Service Assistant
Social Worker
School Social Worker
Medical Social Worker
Psychiatric Social Worker

INFORMATION SHEET

Specific Social-Work Specialities

1. Family Service Worker - Specializes in prevention and solution of problems affecting family unity and stability.
2. Child Welfare Worker
    a. Deals with children who have incompetent parents, abandoned children, or orphans.
    b. Locates foster homes, adoption sources, and attention from juvenile court; advises parents, helps handicapped children.
3. Rehabilitation Social Worker - Assists handicapped persons in adjusting to demands of everyday living.
4. Probation and Parole Officer
    a. Employed by federal, state, county, or city governments.
    b. Assists probationers, parolees, and juvenile offenders in readjusting to society.
    c. Makes investigations and submits reports concerning client conduct, activities, and adjustment.
5. Social Work Researcher - Researches to determine why certain services are needed, how agencies should be operated, and effectiveness of various services.

Terms and Definitions

1. Caseworker - A person who works on a person-to-person basis with individuals and families to help them solve any of various social problems.
2. Group Work - Work to achieve common goals pertaining to personal and social needs among groups of people, usually organized by a social worker.
3. Community Organization Work - A method used by social workers to help people collectively solve basic problems, ghettos, alcoholism, drug addiction, crime.

INFORMATION SHEET

XVIII. Technical Instrumentation

Improved instrumentation requires new techniques and trained workers. Although these workers report to physicians, they must nevertheless be capable of making quick, independent decisions, as they monitor and work with equipment on which patient's lives may depend.

Basic job titles:
Cardiology Technologist/Technician
Cardiopulmonary Technologist/Technician
Diagnostic Medical Sonographer
Dialysis Technician
Electroencephalographic Technologist
Electroencephalographic Technician
Perfusionist
Radiologic Technologist
Respiratory Therapist
Respiratory Therapy Technician

Terms and Definitions

1. Electrocardiograph - Device for recording variations in action of heart muscles.

2. Electroencephalograph - An instrument for measuring and recording the electroactivity of the brain.

3. Diagnosis - A process of determining by examination the nature and circumstances of a diseased condition.

4. Prognosis - Especially, a forecast of the possibility of recovery from a disease based on diagnosis.

XIX. Therapists

The primary objective of therapy is helping individuals with physical, mental, or social handicaps to regain their capacity for self-help and independence. To meet this goal, different kinds of therapists are employed, each with special knowledge and skills which can be used in rehabilitation.

Basic job titles:
Art Therapist
Athletic Trainer
Corrective Therapist
Dance Therapist
Orthotist
Physical Therapist
Prosthetist
Recreational Therapist
Vocational Rehabilitation
Horticultural Therapist
Manual Arts Therapist
Music Therapist
Occupational Therapist
Occupational Therapy Assistant
Orthotic-Prosthetic Technician
Physical Therapy Assistant
Speech Pathologist and Audiologist
Counselor

INFORMATION SHEET

Terms and Definitions

1. Therapy - The treatment of a disease or disorder by some remedial or curative process.
2. Rehabilitate - To restore to a condition of good health, ability to work or the like.
3. Ambulate - To be able to move from place to place with little or no assistance such as in walking.
4. Manipulate - To handle, manage, or use, especially with skill, in some process of treatment or performance.
5. Remedial - Intended to correct or improve one's skill in a specified field.
6. Orthopist and Prosthetist - Provides total physical rehabilitation to disabled in the use of artificial limbs, including fitting and adjustment to use.
7. Corrective Therapist - Teaches exercise routines to wheelchair and other handicapped persons; also, use of braces, crutches. Evaluates strength, endurance, and self-care ability of patient.
8. Manual Art Therapist - Utilizes work activities to give recovering patient confidence, achievement and motivation.

XX. Veterinary Medicine

Veterinary medicine deals with the health of the animal population. Because of the demand for veterinary services, career opportunities can be found in private practice, research, or government service.

Basic job titles:
Animal Technician
Veterinarian
Animal Health Technician
Veterinary Science Technician

XXI. Vision Care

Safeguarding vision - helping people to see better or more comfortably - involves a number of health care professionals, each have special responsibilities and skills.

INFORMATION SHEET

Basic Job Titles:
Dispensing Optician
Ophthalmic Medical Assistant
Optical Laboratory Technician
Optometric Technician and Optometric Assistant
Optometrist
Orthopist
Ophthalmologist

Terms and Definitions:

1. Orthopist - A specialist who diagnoses and treats eye-muscle and fused-vision disorders. Under the supervision of an ophthalmologist, they work with children and adults who need training in coordinating the use of both eyes.

2. Ophthalmologist (M.D. or O.D.) - Physician who specializes in the diagnosis and treatment of defects or disease of the eye.

3. Optometrist (O.D.) - Health care professional who specializes in examination, diagnosis and treatment of conditions of the vision system. Treatment includes prescription of corrective lenses, contact lenses, special optical aids and vision therapy.

EXPLORING HEALTH CAREERS
UNIT IV

ASSIGNMENT SHEET #1--EXPLORING HEALTH CAREERS

Use the form below and on the following pages to record your investigation of an occupation in each of the sixteen health career fields. Sources of occupation information include the following:

Health Careers Guidebook
School and public libraries
Counselors
Government agencies
Professional associations
Trade and business associations
Employers
People working in the health field
Audio-visual materials
Chambers of commerce

Name of Occupation ______________________________

Definition of Occupation ______________________________

____

____

____

What Duties are Performed on the Job? ______________________________

____

____

____

What Training is Necessary for Employment? ______________________________

____

____

____

Where Can You Receive This Training? (Be specific--locate places in Arkansas where this training can be obtained.)

Is Licensure or Certification Required?

What Special Knowledge and Skills are Required?

What are the Local and State Employment Opportunities?

What is the Salary Range?

What are the Opportunities for Advancement?

What Life Style is Required of this Occupation? (Working hours, working conditions, time off, travel, contact with others.)

What Other Health Team Members Would You Work With in this Occupation?

List Reasons Why You May or May Not be Interested in this Occupation.

HEALTH CAREERS
UNIT IV

ANSWERS TO ASSIGNMENT SHEET

Assignment Sheet #1 - Evaluated to the satisfaction of the instructor.

HEALTH CAREERS
UNIT IV

JOB SHEET #1--HOW TO MAKE AND STAIN A BLOOD SMEAR

I. Procedure for Making a Blood Smear

A good smear must show a gradual transition from thick to thin. There should be no waves, holes, or clots appearing in the smear. The thin edge should terminate with a feather edge. Blood smears should not occupy the full length of the slide, and there should not be any streaks of blood extending beyond the feather edge.

The thickness of the smear may be controlled by the angle at which the spreader slide is held and the speed with which the smear is made. Thick smears are usually unsuitable for routine hematologic work. Uneven distribution of the cells can occur and incorrect percentages may result if slides lack uniformity.

Excessively thick smears tend to make the identification of leukocytes difficult. Thin smears are satisfactory for studies of red cell morphology, but they make the counting of leukocytes monotonous and tedious.

A. Materials

1. Clean glass slides
2. Blood sample
3. Marking pencil and/or lead pencil

B. Procedure

1. Temporarily label two glass slides.
2. Place a small drop of either fresh capillary blood or preserved venous blood on the slide approximately 2 cm from the edge.
3. Place the slide with the drop of blood facing upward on a firm surface. Hold the slide at the edge.
4. Hold the spreader slide with thumb and index finger.
5. Place the spreader slide in front of the drop of blood at an angle of approximately 45° to the first slide.

6. Draw the spreader slide backward into the drop of blood and allow the blood to flow evenly across the width of the slide.

7. Quickly slide the spreader slide along the surface of the first slide. Use a gliding motion for this and avoid exerting a strong downward pressure.

8. Immediately dry the slide by waving it in the air. This will minimize the distortion of cells. A gentle current of air, such as that supplied by a hair dryer, may also be used.

9. Using a lead pencil, etch identification in the dry blood at the thick edge of the smear.

10. Store the slides in a vertical position until they are ready to be stained.

II. Procedure for Staining Smears with Wright's Stain

A. Materials

1. Wright's stain
2. Wright's stain buffer solution
3. Air-dried blood smears
4. Staining rack
5. Dropping bottle
6. Wash bottle
7. Laboratory timer
8. Tap water

B. Procedure

1. Place the smear face up on a staining rack or similar device.

2. Cover the smear with a generous quantity of Wright's stain. The smear is fixed during this stage. Set the laboratory timer for at least 3 minutes. Use of a dropping bottle is suitable for the application of the stain. Do not allow the stain to dry on the smears, or precipitation of the stain will occur.

3. The staining of the cells, and their components occurs during this step. After 3 minutes, gently add an equal amount of phosphate buffer to the slide and set the timer for 3-6 minutes. This solution should be added dropwise from a polyethylene wash bottle, and the mixture must not run off the slide. Gently blow on the slide to ensure even distribution of the diluted stain. A greenish metallic scum should appear.

4. Wash the slide with a generous amount of water.

5. Remove the excess dye from the back of the slide by wiping it with gauze. Place the slide in a vertical position with the thickest portion down. Allow the slide to air-dry before examining it under the microscope. A well-stained smear will appear pink when dry.

Reproduced with permission by Wittman and Thomas, Medical Laboratory Skills, (1977)

HEALTH CAREERS
UNIT IV

JOB SHEET #2--HOW TO BRUSH AND FLOSS TEETH*

I. Tools and materials needed

   A. Soft toothbrush

   B. Toothpaste or tooth powder

   C. Dental floss

II. Procedure

   A. Place the head of your toothbrush alongside your teeth, with the bristle tips angled against the gum line (see figure 1).

   B. Move the brush back and forth with short (half-a-tooth wide) strokes several times, using a gentle "scrubbing" motion.

   C. Brush the outer surfaces of each tooth, uppers and lowers, keeping the bristles angled against the gum line.

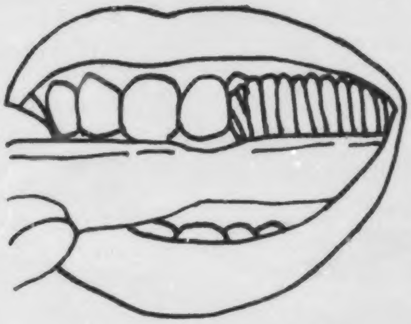


Figure 1

   D. Use the same method on all of the inside surfaces of your teeth, upper and lower, still using the short back and forth strokes.

   E. For the front teeth, brush the inside surfaces of the upper and lower jaws by tilting the brush vertically and making several gentle up and down strokes with the "toe" (the front part) of the brush over the teeth and gum tissue (see figure 2).

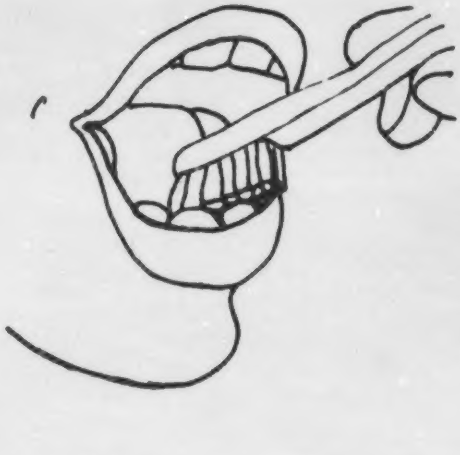


Figure 2

Copyright by the American Dental Association. Reprinted by permission.

F. Break off about 18 inches of floss and wind most of it around one of your middle fingers.

G. Wind the rest around the same finger of the opposite hand. This finger can "take up" the floss as it becomes soiled. (see figure 3)

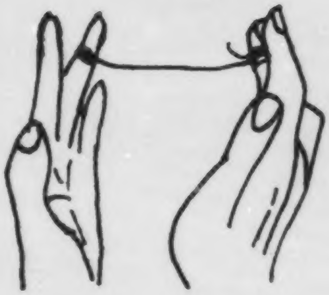


Figure 3

H. Use your thumbs and forefingers with an inch of floss between them to guide the floss between your teeth. (see figure 4)

I. Holding the floss tightly (there should be no slack), use a gentle sawing motion to insert the floss between your teeth. Never "snap" the floss into the gums! When the floss reaches the gum line curve it into a C-shape against one tooth and gently slide it into the space between the gum and the tooth until you feel resistance. (see figure 5)

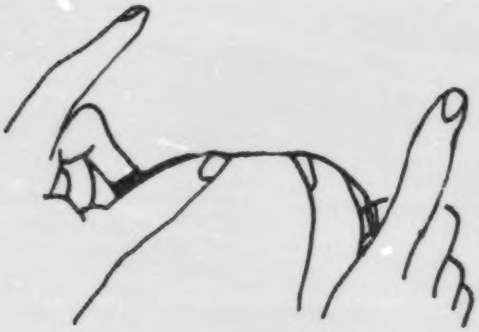


Figure 4

J. While holding the floss tightly against the tooth, move the floss away from the gum by scraping the floss up and down against the side of the tooth.

K. Repeat this method on the rest of your teeth.

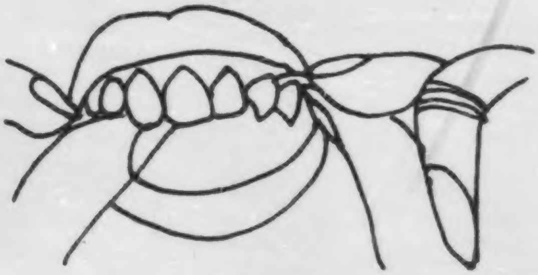


Figure 5

HEALTH CAREERS
UNIT IV

JOB SHEET #3--WASHING HANDS USING ASEPTIC TECHNIQUE

I. Tools and equipment required:

   A. Running water

   B. Soap

   C. Hand brush

   C. Waste container

II. Procedures

   A. Turn on water, adjust to warm temperature.

      1. When automatic foot-controlled faucets are used, turn water on when needed.

      2. When hand-controlled faucets are used leave water running throughout the procedure.

   B. Wet hands and wrists.

   C. Apply soap or detergent thoroughly, cover entire area of hands and wrists.

   D. Add water as necessary to promote lather.

   E. Continue washing hands for two minutes.

   F. Use hand brush and clean nails if needed.

   G. Wash wrists and above wrists three or four inches using rotary action. (10-15 times)

   H. Repeat procedures B-G for two minutes or 120 strokes.

   I. Rinse carefully with hands held lower than the arms.

   J. Dry hands and wrists well with a different paper towel and discard it.

   K. Turn off each faucet with a different paper towel and discard it.

   L. Use hand lotion if desired.

   M. Repeat procedure until the skill is easily done.

HEALTH CAREERS
UNIT IV

JOB SHEET #4--THE PROPER USE OF THE STETHOSCOPE

I. Tools and Materials Needed

   A. Medical stethoscope
   B. Chart for showing rate of heart beat
   C. Volunteers from the class to act as patients

II. Procedure

   A. Place the stethoscope upon the "patient's" chest near the middle of the diaphragm and listen to the sounds of the heart.

   B. It may be necessary to move the stethoscope position somewhat in order to get a louder and stronger heart tone.

   C. Count the number of beats that the heart makes during a thirty-second interval and record this on the chart.

   D. Now place the stethoscope on the "patient's" back in the general vicinity of the lower part of the lung, and have the "patient" take several deep breaths with their mouth open. Once again the stethoscope may have to be moved to get a louder and stronger breath tone.

   E. Notice the sound of the air as it passes through and out of the lungs. If the tone is strong and low then there is no congestion. But if the air sound is "raspy" or seems to "rattle" then the "patient" may have some lung congestion.

   F. Record your description of the sound. Instructor will evaluate technique.

HEALTH CAREERS
UNIT IV

JOB SHEET #5--THE PROPER USE OF THE SYRINGE

I. Tools and materials needed

A. Syringe and needle

B. Vial

II. Procedure

A. Take the package with the syringe in it and open it.

B. Open the package with the needle in it and place the needle onto the syringe being careful not to contaminate the needle.

C. Pull the plunger back to get several cc's of air in it and then gently insert the needle into the vial which has been wiped with alcohol. Push the plunger so that air enters the vial. Then turn the vial upside down and pull the plunger back and notice how it starts to fill.

D. The process can be reversed. Fill the syringe with fluid and gently insert the needle into the vial. Slowly press the plunger down and inject the fluid into the vial.

HEALTH CAREERS

UNIT IV

JOB SHEET #6--MEASURE PATIENT HEIGHT AND WEIGHT

I. Tools and Materials Needed:

- A. Upright scale
- B. Paper towels
- C. Pen or pencil
- D. Pad

II. Job Procedures

- A. Balance scales
- B. Place two paper towels on base of scales for patient to stand on
- C. Have patient remove shoes and step forward
- D. Weigh patient
- E. Raise stick and carefully place horizontal bar across top of patient's head, instructing patient to stand as fully erect as possible. Be sure the horizontal bar is level (if desired, the patient may turn and have the back to the measuring stick).
- F. Convert measurement to feet and inches.

  For example:

  12 inches = 1 foot
  a. 60 inches = 5 feet
  b. 57 inches = 4 feet, 9 inches
  c. 70 inches = 5 feet, 10 inches

- G. Record both the weight and height of the patient in the patient's chart.

HEALTH CARRERS
UNIT IV

JOB SHEET #7--HOW TO DISINFECT DRINKING WATER

I. Tools and materials needed:

  A. Water to disinfect

  B. Purex, Clorox, or any bleach preparation

  C. Quart container

  D. **Teaspoon measure**

II. Procedure:

  A. Pour water into quart container until the full mark is reached.

  B. Measure two teaspoons of bleach preparation and add to the quart container of water.

  C. Mix thoroughly. Water is now free of bacteria and is safe to drink.

  D. The general proportions of water and bleach were figured from 1000 gallons of H_2O to one gallon of bleach.

HEALTH CAREERS
UNIT IV

JOB SHEET #8--TAKE A BLOOD PRESSURE

I. Tools and equipment needed:

   A. Sphygmomanometer

   B. Stethoscope

   C. Pen and Paper

II. Job Procedures:

   A. Wash hands

   B. Assemble equipment and take to bedside.

   C. Identify patient and explain procedure.

      (NOTE: Patient should be lying down or sitting with the arm supported with palm up in a natural position.

      Further explanation: Procedure is not painful.)

   D. Wrap the collapsed cuff of the blood-pressure apparatus around the upper arm just above the elbow, exposing the inner side.

      (NOTE: The patient's arm should be bare. Hands and fingers should be relaxed.)

   E. Check to see if tube is attached to cuff on patient's arm.

   F. Place ear pieces of stethoscope in your ears.

   G. Tighten the thumb screw on the rubber bulb of the sphygmomanometer.

   H. Find brachial artery pulse with fingertips and place diaphragm or bell of stethoscope over pulse beat, holding it tightly against the pulse area.

   I. Inflate the cuff by squeezing the bulb until the pulse stops. Then inflate cuff 20 points higher.

      (NOTE: As the cuff fills, the mercury or dial rises.)

J. Watch the mercury or dial.

K. Loosen the screw or valve slowly to let the air out.

L. Listen for the first thumping sound of the beat.

M. Observe and remember the number where the first sound is heard; this is the systolic pressure.

N. Continue letting air slowly out of the cuff, listening until the last beat is heard or notice when the beat changes to a soft thump.

O. Observe and note the number on the dial or column where you heard the last beat; this is the diastolic pressure.

P. Loosen the screw all the way to release all the air from the cuff.

Q. Remove the cuff from the patient's arm and write the two readings down. Record and report blood pressure.

(NOTE: Blood pressure 110/90--systolic pressure over diastolic pressure)

R. Fold the cuff and clean stethoscope

S. Return to designated area.

T. Wash hands.

HEALTH CAREERS
UNIT IV

JOB SHEET #9--THE PROPER USES OF CRUTCHES AND WHEELCHAIR

I. Tools and Materials Needed

   A. Pair of crutches

   B. Wheelchair

   C. Volunteers from class

II. Procedure

   A. Place the crutches in proper position underneath volunteer's armpits.

      1. Crutch wings should not be touching the armpit itself, but should be approximately two to four inches lower to prevent the crutch from cutting off blood circulation in the armpit area.

   B. Position the crutch handles so that the "patient" does have a slight bend in the elbows when he is standing in an upright position.

      1. Crutch handles perhaps should be cushioned to prevent rawness of hands from prolonged use.

   C. Place a volunteer who is (or simulates being) a paraplegic from waist down in a wheelchair.

      1. Accompany "patient" as he/she tries to propel himself/herself through various parts of the school. Record what areas do not provide for the use of wheelchairs; e.g., ramps, rest rooms, pathways, corridors, doors, etc.

   D. Remove the "patient" from the wheelchair.

      1. First lift up the foot wings of the wheelchair and place the "patient's" feet on the floor.

      2. Make sure that the wheelchair is locked or prevented from rolling, and that the wheelchair is close to the area where the patient will be placed.

3. Place your left foot and leg between the "patient's" legs near the seat of the wheelchair. Your right leg should be slightly back from and outside of the "patient's" left leg.

4. Bend over and place your hands and arms underneath the "patient's" armpits. Lift the "patient" off the chair, and with your free right leg, step toward the place where the "patient" is to be placed. In the same manner, place the "patient" in a seated position in the new place.

5. This same procedure can be used if the "patient" is to be moved to the left. Merely reverse your legs so that your left leg is free to move to the left.

HEALTH CAREERS
UNIT IV

UNIT TEST

1. Name four advantages of being a health worker.

   a.

   b.

   c.

   d.

2. State the difference between licensure and certification.

3. Name the 2 types of teams in health delivery.

   a.

   b.

4. Match types of patient-centered teams to their correct descriptions by placing the correct numbers in the appropriate blanks.

   ____ a. Health care workers who are the most distantly related to the patient - concerned about the entire community

   ____ b. Health care workers who provide back-up services - they deal with a part of the patient

   ____ c. Health care workers who have the most sustained contact with the patient

   1. Patient care team
   2. Medical care team
   3. Health care team

5. Name the 16 major health career fields

    a.

    b.

    c.

    d.

    e.

    f.

    g.

    h.

    i.

    j.

    k.

    l.

    m.

    n.

    o.

    p.

6. Match terms associated with health careers to the correct definition by placing the correct numbers in the appropriate blank.

    1. Diet
    2. Prognosis
    3. Family Service Worker
    4. Cardiologist
    5. Pharmacologist
    6. Geriatrics
    7. Periodontics
    8. Microbiology
    9. Electroencephalograph
    10. Therapy
    11. Music Therapist
    12. Ecology
    13. Blood Bank Technologist
    14. Communication
    15. Diagnosis
    16. Pediatrician
    17. Calorie
    18. Ophthalmologist
    19. Obstetrical Nurse

____ a. Physician who specializes in treatment of children's diseases.

____ b. Physician who specializes in treatment of heart disorders.

____ c. The study of organism structure and functions through a microscope.

____ d. A unit of measurement of the heat output of an organism and the fuel or energy value of food.

____ e. Collects blood from donors, classifies, processes and stores blood for instant availability.

____ f. That which you eat and drink.

____ g. Concerned with gums and parts of jaw bone that support teeth.

____ h. Treatment of diseases of the elderly.

____ i. Works in delivery room assisting doctor during and after deliveries.

____ j. The act or process of interchange of thoughts, opinions, or information by speech, writing, or audio-visual media.

____ k. That area of biology that deals with the relationships between organisms and their environment.

____ l. The name of the occupation held by a person who studies, tests, and/or does research on drugs and their effects on living organisms.

____ m. A process of determining by examination of the nature and circumstances of a diseased condition.

____ n. An instrument for measuring and recording the electro activity of the brain.

____ o. Specializes in prevention and solution of problems affecting family unity and stability.

____ p. A forecast of the possibility of recovery from a disease based on diagnosis.

____ q. The treatment of a disease or disorder by some remedial or curative process.

____ r. Applies music to disabled and mentally disturbed.

____ s. Physician who specializes in the diagnosis and treatment of defects and diseases of the eye.

7. Explore a health career in each of the 16 health career fields.

8. Demonstrate the ability to:

   a. Make and stain a blood smear.

   b. Use the proper technique to brush and floss teeth.

   c. Wash hands using the aseptic technique.

   d. Use the stethoscope

   e. Show the proper use of the syringe

   f. Measure height and weight

   g. Disinfect drinking water

   h. Take a blood pressure

   i. Show proper use of crutches and wheelchairs.

(NOTE: If activities #7 and #8 have not been completed prior to the test, ask the instructor when they should be completed.)

HEALTH CAREERS
UNIT IV

ANSWERS TO TEST

1. Any four of the following:
   a. Variety of work
   b. Professional pride
   c. Availability of work and geographic mobility
   d. Advancement
   e. Salary and benefits
   f. Excellent work environment

2. Licensure is granted by the state licensing agency when a student graduates from an approved program and passes a special licensing examination.

   Certification is granted by the national health professions organizations, not the individual states. To obtain certification a student must complete a program of training accredited by the organization and must pass a special certification examination.

3. a. Functional
   b. Patient-centered

4. __3__ a.
   __2__ b.
   __1__ c.

5. a. Clinical laboratory service
   b. Dentistry
   c. Dietetics and nutrition
   d. Education
   e. Health information and communication

f. Health services administration

g. Medicine

h. Nursing

i. Pharmacy

j. Psychology

k. Science and engineering

l. Social work

m. Technical instrumentation

n. Therapists

o. Veterinary medicine

p. Vision care

6. a. 16

b. 4

c. 8

d. 17

e. 13

f. 1

g. 7

h. 6

i. 19

j. 14

k. 12

l. 5

m. 15

n. 9

o. 3

p. 2

q. 10

r. 11

s. 18

7. Evaluated to the satisfaction of the instructor.

8. Evaluated to the satisfaction of the instructor.

CAREER DECISIONS
UNIT V

UNIT OBJECTIVE

After completing this unit, the student will be able to demonstrate, given guidelines, awareness of her/his own interests, values, needs, abilities and important experiences. Given guidelines, the student will be able to clarify her/his attitudes and knowledge concerning work and choosing a health occupation. The student will also be able to set realistic goals and write a career plan.

SPECIFIC OBJECTIVES

After completing this unit, the student will be able to:

1. Identify important experiences, events and people in her/his life.
2. Identify activities that are important to her/him.
3. Name her/his own abilities, strengths and talents.
4. Identify values that she/he would associate with her/himself.
5. Describe her/himself in and out of school.
6. Describe what she/he wants to have happen in the next five years of her/his life and indicate how much she/he may be able to influence the future.
7. Given Maslow's hierarchy of human needs, identify the needs she/he has and how they are not met now and in the future.
8. Summarize what she/he has learned about her/himself.
9. Distinguish an occupation from a career.
10. Describe in detail a job she/he would consider ideal.
11. Identify jobs she/he has held and discuss likes and dislikes.
12. Describe traditional and untraditional work roles for male and female.

13. Select from many choices her/his work preferences.
14. Identify how she/he wants to use time and the life-style implications.
15. Identify the rewards she/he wants from a career.
16. Identify reasons she/he is interested in a health occupation.
17. Identify ten favorable traits that are essential to a worker in health and identify which trait she/he possesses or needs to improve.
18. Describe her/his current career planning situation and identify what decisions need to be made.
19. List several occupations she/he may like to prepare for in the future.
20. Write her/his career planning goals and objectives.
21. Identify ways to meet her/his career planning objective.
22. Write an action plan with activities to be done, how they will be accomplished, and the dates.
23. Describe how an unplanned event might change her/his plans for a career and what she/he would do.
24. Share her/his plans with family, friends, fellow students or significant others.

CAREER DECISIONS
UNIT V

SUGGESTED ACTIVITIES

I. Suggested Activities for the Instructor.

   A. Provide students with objective sheet.

   B. Discuss unit and specific objectives.

   C. Provide students with information and exercise sheets.

   D. Read over explanatory materials for the exercises for the instructor.

   E. Discuss information and exercise sheets.

   F. Act as a facilitator during exercises.

II. Instructional Materials

   A. Objective sheet

   B. Information sheet

   C. Exercise sheets

      1. Exercise #1
         "My Life Path"

      2. Exercise #2
         "What I Like To Do"

      3. Exercise #3
         "What I Do Best"

      4. Exercise #4
         "What I Value"

      5. Exercise #5
         "A Picture of Myself"

      6. Exercise #6
         "A Look Into The Future"

      7. Exercise #7
         "What I Need"

      8. Exercise #8
         "Summing Myself Up"

9. Exercise #9
"Occupations and Careers"

10. Exercise #10
"This Job Is For Me"

11. Exercise #11
"Jobs I've Held"

12. Exercise #12
"Traditional and Untraditional Roles"

13. Exercise #13
"My Work Preferences"

14. Exercise #14
"How I Want To Live"

15. Exercise #15
"What Are My Rewards"

16. Exercise #16
"A Health Career"

17. Exercise #17
"Being A Health Worker"

18. Exercise #18
"Decisions To Make"

19. Exercise #19
"Knowing My Choices"

20. Exercise #20
"My Goals and Objectives"

21. Exercise #21
"An Action Plan"

22. Exercise #22
"The Wheel of Chance"

23. Exercise #23
"Sharing With Others"

III. Unit References

Minnesota Secondary Health Occupations Curriculum Guidelines. Career Planning. Division of Vocational-Technical Education, Minnesota Department of Education.

IV. Additional Resources:

Films available from: The Arkansas Department of Health
Division of Public Health Education
4815 West Markham Street
Little Rock, AR 72201

C 107 "Health and Lifestyle"

EXERCISE MATERIALS
FOR THE INSTRUCTOR

CAREER PLANNING: Exercise 1

KNOWING MYSELF

"MY LIFE PATH"

PURPOSE

To increase the student's awareness of her/himself. To enable the student to focus on her/his whole life; past, present and future and to identify important events or experiences.

HELPING OBJECTIVE

The student identifies important experiences, events and people in her/his life.

MATERIALS

Student career planning guide
Colored pencils or pens

TIME REQUIRED

Approximately 1 hour 15 minutes

GROUPS

Sub-groups (3-4 students)

INSTRUCTOR PREPARATION

Read through this exercise.

PROCEDURE

1. Announce the purpose of this exercise, and the materials required. Note the time required (1¼ hours). Have students meet in groups of 3-4.

2. Say to the student, "Draw a path on the page in the guide with the heading 'Your Life Path'. This path is to represent your life. The drawings can take any form. On the life path indicate the most important events that have happened to you. Make sure the life path indicates the past, present and the future. The questions in your guide may help you in finding events to draw on your life path. Be sure to draw out what you would like your life in the future to look like." (25 minutes)

3. "Share your drawings with other members in your small groups."
    a. Each person reports whatever s/he wants about her/his drawing. (10 minutes)
    b. The other members of the small group will ask questions about what seems to be important on the person's life path.
    c. The reporter uses the space in the guide to write down ideas about what is important in her/his life.
4. Call the entire group together (check to see if everyone is ready) and ask for reactions, feelings or questions. Suggest that students keep the life path drawings to use as a reference for future use in planning a career.

CAREER PLANNING: Exercise 2

KNOWING MYSELF

"WHAT I LIKE TO DO"

PURPOSE

To increase the student's awareness of her/himself. To assist the student in identifying activities s/he enjoys doing. To enable students to get to know one another through sharing interests.

HELPING OBJECTIVE

The student identifies activities that are important to her/him.

MATERIALS

Student career planning guide.

TIME REQUIRED

Approximately 45 minutes

GROUPS

Students work individually and share in groups of 3-4.

INSTRUCTOR PREPARATION

1. Inform students of the purpose of this exercise and the materials required. Note the time required. Have students meet in groups of 3-4.

2. Say to the students, "Think about the things you enojy doing. List as many of these as you can in the blanks in your guide (at least 10). Include hobbies, interests, activities, talents, dreams....whatever is important to you. Work individually at this and complete in 15 minutes.

3. Have students meet in small groups and discuss the following questions:

    a. Are the things you like most to do the ones you do most often or have done most recently? (10 minutes)

    b. Are the things you like most to do things you can still do when you have a job? (10 minutes)

c. Are the things you most enjoy the ones that you choose to do or the ones you are told to do? (10 minutes)

d. What things have others listed that you would like to include on your list?

CAREER PLANNING: Exercise 3

KNOWING MYSELF

"WHAT I DO BEST"

PURPOSE

To increase the student's awareness of her/himself. To help the student assess the talents, abilities and strengths s/he may possess. To enable students to give and receive from one another the positive information concerning themselves, to help build self-esteem, confidence, and acceptance of individuals. To demonstrate that all people have some resources.

HELPING OBJECTIVE

The student names her/his own abilities, strengths and talents.

MATERIALS

Blackboard and chalk
Student career planning guide

TIME REQUIRED

Approximately 55 minutes

GROUPS

Total Group
Sub-groups of 3-4.

INSTRUCTOR PREPARATION

Read through the exercise.

Prepare to have the class "brainstorm" or list all the possible skills, talents, abilities, strengths and resources people can possess. You may want to develop broad categories before the session begins. The following are included to serve only as examples. Feel free to develop your own.

- Physical
- Manual
- Mechanical
- Clerical
- Executive
- Social
- Musical
- Artistic
- Mental

(A suggested introduction to this exercise is to read Fuzzies: A Fable for All Ages, by L. Richard Lessor: Argus Communication, 1971.)

PROCEDURE

1. Bring the total group together.
   Be sure the entire group begins to think about people's strengths and abilities in a very broad sense. Emphasize that everyone has resources and we need to know what they are in order to better know ourselves. This is especially important in planning a career.

   Write the categories on the blackboard or start from scratch and have the students think of all the possible resources, talents or abilities students suggest. (15 minutes)

   Say to the students, "Take some time to brag about yourselves (spread out from around the blackboard). Looking at the lists on the board and thinking about yourself, list ten abilities, resources and strengths you have on the appropriate page in your student guide. Refer to the list of things you like to do in the previous exercise." (15 minutes)

2. "Look over your list and put x's by the three you think you do best." (5 minutes)

3. "Meet in small groups of 3-4 people and each of you share with the others the three things you do best."

4. "Each of you review the list you have developed and share and "✓" which abilities you would most like to use in your life or work in the future. Discuss how might you use these abilities in work." (15 minutes)

5. "Consider each member in the group and think about one thing you think they do well. Pass the student guides around the group and write in each others' book to complete the sentence, 'One thing I think you do well is ____________________'. Sign you name." (10 minutes)

COMMENTS

Many students may be uncomfortable talking about things that they do well. In fact, they may very well be more comfortable "complaining" than "bragging" about themselves. Many students seem to be more aware of their weaknesses than their strengths. Often students have experiences in school that reinforce a negative self-image.

This exercise enables students to understand that there are many kinds of resources people can possess. It also helps to establish a supportive environment in the classroom.

To further help students to assess their abilities it is important that they know what basic scholastic and study skills they possess. This is especially important in career planning so that a student may work on improving skills throughout the year and make realistic career plans.

To assist in this assessment arrange with the school counselor,or appropriate personnel who may work with the scholastic tests of the students,to explain how they can be used as a resource by the students. Invite this person to come to the class and encourage the students to make an appointment with the counselor to explore what scholastic and basic study skills they possess and those they can improve. Further appointments may then be made with appropriate school instructors.

CAREER PLANNING: Exercise 4

KNOWING MYSELF

"WHAT I VALUE"

PURPOSE

To assist students in identifying their own values. To define what a value is.

HELPING OBJECTIVE

The student identifies values that s/he would associate with her/himself.

MATERIALS

Student career planning guide

TIME REQUIRED

Approximately 1 hour 10 minutes.

GROUPS

Students work individually

INSTRUCTOR PREPARATION

Read through the instructions in the student guide.

PROCEDURE

1. Announce the purpose of the exercise.
2. a. Have students view sound-slide program: "Clarifying Your Values: Guidelines for Living" by the Center for Humanities, Inc.
   b. Have students work in a group to discuss the slide program.
3. Have students complete Career Planning Exercise 4: Knowing Myself - "What I Value".

CAREER PLANNING: Exercise 5

KNOWING MYSELF

"A PICUTRE OF MYSELF"

PURPOSE

To increase the student's awareness of her/himself. To enable the student to begin to see what kind of self-image s/he possesses both in and out of school. To show how people change in different situations. To help students to begin to share with others their self-identity.

HELPING OBJECTIVE

The student describes her/his personal characteristics using the words "I am...."

MATERIALS

Student career planning guide
Colored pencils or pens
Old magazines
Paper and paste

TIME REQUIRED

Approximately 1 hour 30 minutes

GROUPS

Sub-groups of 3-4.

INSTRUCTOR

Read through the instructions and guide. Have any drawing materials or collage materials prepared.

PROCEDURE

1. Have students view the sound slide program "Am I Worthwhile: Identity and Self-Image" by the Center for Humanities, Inc. Discuss the indicated questions from the Teacher's Manual with the student. (40 minutes)
2. Say to student, "Turn to the exercise titled a Self-Portrait. Make a drawing of yourself that best describes you. Don't worry how it looks. Be sure that it has meaning to you. If you choose not to draw, select parts of magazines to put together on the page." (20 minutes)

3. When finished, have students hang the collages on the walls. Walk around the room and try to guess who is represented by each collage.

4. Join your sub-groups and discuss: What did you draw? How do you feel about your drawings?" (10 minutes)

5. "Turn to the page titled Who Am I and answer these questions:
   One thing I wish I was is...
   One thing I like about me is...
   One thing I would like to change is..." (5 minutes)

6. Have students read the theme "Who Am I" and underline the important statements. (5 minutes)

COMMENTS

It is important that each person has time to share her/his drawing. You may want to emphasize that people may seem different in different situations; like in and out of school, in and out of work, with friends and strangers, etc. The important thing is for a person to look at and understand their many personalities in order to form a total picture of themselves.

CAREER PLANNING: Exercise 6

KNOWING MYSELF

" LOOK INTO THE FUTURE"

PURPOSE

To examine what each student wants in the future. To help students think about what they want to do with their lives. To assist students in clarifying what role they have in determining what their future will be.

HELPING OBJECTIVE

The student describes what s/he wants to have happen in the next five years of her/his life, and indicates how much s/he will be able to influence the future.

MATERIALS

Student career planning guide
A crystal ball if it is available...every teacher should have one (a drawing on the blackboard should suffice)

TIME REQUIRED

Approximately 1 hour

GROUPS

Sub-groups of approximately 4 students

INSTRUCTOR PREPARATION

Read through this exercise. You may want to draw a crystal ball and the continuum from the guide on the blackboard to help students focus in on the exercise.

PROCEDURE

1. Announce the purpose of the exercise and have students meet in groups of four.

2. Say to students, "Imagine you have a crystal ball in front of you that will help you to see what you want your future to bring. Imagine that you've already graduated and you are now five years older. How old does that make you?_________ In the spaces indicated write or draw what you want to have happen in the next five years. (20 minutes)

3. "When you are finished, share with your groups what you have included in your future." (30 minutes)

4. "On the Influence Line place an x on the point you believe shows just how much influence you have in deciding your future. Discuss with your group the reason for placing the x where you did.*" (15 minutes)

COMMENTS

Students may have difficulty in drawing or writing about their future. Encourage them to put down whatever comes to their mind no matter how fantastic it may seem at the moment. It is important that students enjoy this exercise as it will then be easier to project into the future.

*One way to involve students more in the Influence Line exercise is to use the total group of students. Tell them that one end of the room represents a lot of influence and the other end represents no influence. Have the students make a straight line between these points placing themselves where they think they belong. Then, discuss with the total group together why they placed themselves where they did and what difficulty they had doing it.

CAREER PLANNING: Exercise 7

KNOWING MYSELF

"WHAT I NEED"

PURPOSE

To increase the student's awareness of her/himself. To help students identify the many different needs they have and how they are met now and in the future.

HELPING OBJECTIVE

Given Maslow's Hierarchy of human needs, the student identifies the needs s/he has and how they are met now and in the future.

MATERIALS

Student career planning guide

TIME REQUIRED

Approximately 1 hour

GROUPS

Total group

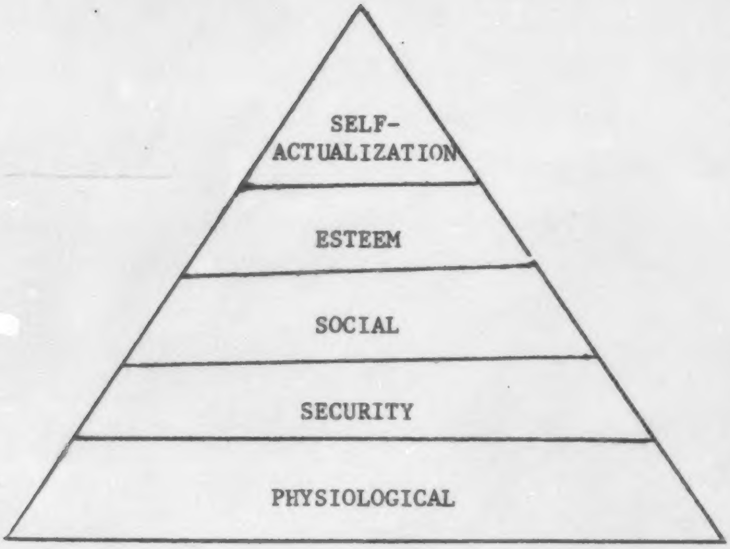
INSTRUCTOR PREPARATION

Read through the exercise. Prepare to give a short lecture on Maslow's hierarchy of human needs. (15 minutes)

PROCEDURE

1. Give a short lecture on Maslow's hierarchy of human needs.
   (See drawing on next page)
   (Briefing) Maslow was interested in what motivates human beings. He found that human beings have needs in the following categories; physiological, security, social, esteem, and self-actualization. These needs are arranged in a pyramid, and the ones on the bottom (physiological) must be satisfied before the next level (security) can be met.

*For further reference see Maslow, Abraham, H., Motivation and Personality, Harper and Row, N. Y., 1970.



Human needs are arranged in a hierarchy of importance. A person is not motivated to meet higher needs until the lower-order ones are met.

Satisfied needs are no longer motivating. Human beings are motivated by what they are seeking, not by what they already have.

Individual needs are always changing. A person's needs may change due to such factors as age, economic security and environmental conditions.

HIERARCHY OF HUMAN NEEDS

Physiological: These are the basic human needs. They must be met before higher levels are satisfied. Some of these needs are humanly instinctive. They include:

Food
Shelter
Wamth (Clothing)
Rest
Reproduction

Security: The need is for protection from physical danger or economic danger. It is a need to have some order in our life; to have an idea of what might happen to us. This is a need for things that are familiar and for forces such as religion and philosophy to organize our lives.

Social: This is a need to belong and interact with other people. This includes being accepted by others, being friends with others, and loving and being loved by others.

Esteem: This need comes from a sense of self-worth, independence, and recognition by others. This may involve recognition and praise for a job well done. It can also be seen in the desire to be respected as a person.

Self-Actualization: This is the highest level of need. Self-Actualization is satisfaction with who you are and what you are doing. It is a feeling that you have chosen "where you are" and it is the best place for you.

2. Ask students to list in their career planning guide the needs they have at each level. Then ask students to think of ways they meet those needs at this time. (10 minutes)

3. Discuss the following questions (or others that are appropriate) as an entire class (30 minutes).

   a. Which level of needs do you think you are at now?
   b. What needs do you have that aren't met at this time?
   c. In ten years, what new needs will you have?
   d. What different levels of human needs do patients have that health workers must respond to? (give examples)

   e. How might you use information about human needs in planning a career?

CAREER PLANNING: Exercise 8

KNOWING MYSELF

"SUMMING MYSELF UP"

PURPOSE

To review the exercises completed in the section KNOWING MYSELF and integrate what students have learned about themselves. To assist students in development of the reflection and summary process.

HELPING OBJECTIVES

The student summarizes what s/he has learned about her/himself.

MATERIALS

Student career planning guide

TIME REQUIRED

Approximately 30 minutes

GROUPS

Students work individually

INSTRUCTOR PREPARATION

Read through this exercise.

PROCEDURE

1. Announce the purpose of this exercise and the materials required. Note the approximate time needed. Have students work individually.

2. Indicate to students that it is important from time to time to reflect on all the things that have happened in career planning. The process of reflection is important in order to get a total picture of separate experiences and activities. As one learns new things about her/himself there needs to be time to pull things together. This is true for anything we do.

3. Have students follow the instructions as indicated in the student guide.

WORK VALUES

PERFORMANCE OBJECTIVE

Given guidelines, the student clarifies her/his attitudes and knowledge concerning work and choosing a health occupation.

HELPING OBJECTIVES

Distinguishes an occupation from a career

Describes in detail a job s/he would consider ideal

Identifies jobs s/he has held and discusses likes and dislikes

Describes traditional and untraditional work roles for males and females

Selects from many choices her/his work preferences

Identifies how s/he wants to use time and the lifestyle implications

Identifies the rewards s/he wants from a career

Identifies reasons s/he is interested in a health occupation

Identifies ten favorable traits that are essential to a worker in health and identifies which traits s/he possesses or needs to improve

CAREER PLANNING: Exercise 9

WORK VALUES

"OCCUPATIONS AND CAREERS"

PURPOSE

To assist students in defining the terms career and occupation.

HELPING OBJECTIVE

The student distinguishes a career from an occupation.

MATERIALS

Student career planning guide
Blackboard

TIME REQUIRED

Approximately 35 minutes

GROUPS

Students work in a total group, individually and in groups of 3-4.

INSTRUCTOR PREPARATION

Read this exercise thoroughly. Define in your mind clearly the terms career and occupation. The definition of career and occupation used in this program are as follows:

Occupation: refers to the grouping of related jobs involved in a specific kind of work. Nursing is an example of an occupation. All the different occupations in health are referred to as health occupations.

Career: refers to all the different occupations, jobs, and positions a person holds throughout life. The jobs and occupations a person chooses often assist a person in planning his/her career directions.

PROCEDURES

1. Announce the purpose of the exercise and have students meet in a total group.

2. Write the terms occupation and career in separate columns on the blackboard. Ask students to name any words that come to their mind when they think of an occupation. Do the same for career. (5 minutes)

3. Summarize a definition of each term from the words listed. (5 minutes)

4. Compare the students' definition with the one included in this exercise. (5 minutes)

5. Instruct students to individually write an acceptable definition of each term in their career planning guides and to explain how they relate. (10 minutes)

6. Have students identify what they are doing to prepare for an occupation and to prepare for a career. (10 minutes)

CAREER PLANNING: Exercise 10

WORK VALUES

"THIS JOB IS FOR ME"

PURPOSE

To assist students in clarifying their expectations for a job. To enable students to get to know one another by sharing their ideals.

HELPING OBJECTIVE

The student describes in detail a job s/he would consider ideal.

MATERIALS

Student career planning guide

TIME REQUIRED

Approximately 55 minutes

GROUPS

Students work individually and share in groups of 2 or 3.

INSTRUCTOR PREPARATION

Read this exercise thoroughly.

PROCEDURES

1. Inform students of the purpose of the exercise and the materials required.

2. Say to student, "Think about a job you would consider ideal. Perhaps there isn't a title for the job yet. Let your imaginations go. Each write a description of this ideal job in your career planning guide. These questions may help you:"

   What are you doing?
   Who are you with?
   Does the job require training?
   What are your rewards?
   What are your work hours?
   What do you do outside of work?
   (10 minutes)

3. "Circle the key words in your description of an ideal job." (5 minutes)

4. "Meet in groups of twos or threes and each share with the others your description of an ideal job." (10 minutes)

5. Have students view "Career Values", Part I by Guidance Associates. Discuss the filmstrip with the students using the Discussion Guide for suggestions. (25 minutes)

CAREER PLANNING: Exercise 11

WORK VALUES

"JOBS I'VE HELD"

PURPOSE

To assist students in clarifying what aspects of jobs they have previously held that they liked and disliked.

HELPING OBJECTIVES

The student identifies job s/he has held and discusses likes and dislikes.

MATERIALS:

Student career planning guide

TIME REQUIRED

Approximately 35 minutes

GROUPS

Students work individually and in total group

INSTRUCTOR PREPARATION

Read through this exercise.

PROCEDURES

1. Announce the purpose of the exercise and the time required.
2. Say to students, "Think about the jobs you have previously held. These may include temporary jobs, volunteer jobs or assistance to other people."
3. "In the columns indicated in your guide list three jobs held and what you liked and disliked about the job." (10 minutes)
4. "In the indicated boxes write three reasons why you think you liked the things you listed and three reasons why you disliked the things you listed." (10 minutes)

5.* "Meet in a total group and discuss:"

What are the likes and dislikes of most people?
Which likes and dislikes most often found and not found in a job?
Which could be planned into a career?

*OPTIONAL

CAREER PLANNING: Exercise 12

WORK VALUES

"TRADITIONAL AND UNTRADITIONAL ROLES"

PURPOSE

To increase the student's awareness of the traditional and untraditional work roles our society defines as acceptable for females and for males. To examine how these beliefs may influence career plans.

HELPING OBJECTIVES

The student describes traditonal and untraditional work roles for males and females.

MATERIALS

Student career planning guide
4 large sheets of newsprint 34" x 27"
tape

TIME REQUIRED

Approximately 1 hour 50 minutes

GROUPS

Students work in two large groups

INSTRUCTOR PREPARATION

Read through the exercise. Prepare 4 large sheets of newsprint by writing one of the following titles on each sheet:

Little Girls Grow Up To Be...
Little Girls Don't Grow Up To Be...
Little Boys Grow Up To Be...
Little Boys Don't Grow Up To Be...

PROCEDURE

1. Start this exercise by bring the total class together and explain the purpose of the exercise. Ask students to think back to when they were children, and to recall statements that they remember adults saying about work roles for males and females.

2. Divide the students into two groups (not more than ten in a group). Give one group the newsprint titled, "Little Girls Grow Up To Be..." and the other group "Little Girls Don't Grow Up To Be..." Have students write in magic marker all the statements they can possibly recall that complete the sentence. (10 minutes)

3. Bring the groups together and have each group read the lists to the other. Tape the lists on the wall for all to see. (10 minutes)

4. Divide the students into the same groups and do the same with the newsprint titled, "Little Boys Grow Up To Be..." and "Little Boys Don't Grow Up To Be..." (10 minutes)

5. Bring the groups together and have them each read their lists to the other. Tape the lists to the other. Tape the lists on the wall for all to see. (10 minutes)

6. Have students consider all the statements written on the newsprint and discuss which ones they believe have most influenced them. (5 minutes)

7. Discuss as a total group how male and female work roles, as they are defined by society, may influence an individual's career plans. (5 minutes)

8. Have students record examples from the newsprint into their career planning guide. (10 minutes)

9. Have students view "Women Today" by Guidance Associates and discuss the filmstrip using the Discussion Guide for suggestions. (40 minutes)

CAREER PLANNING: Exercise 13

WORK VALUES

"MY WORK PREFERENCES"

PURPOSE

To increase the student's awareness of preferences s/he holds for a working situation in order to keep these in mind while looking at specific jobs.

HELPING OBJECTIVES

The student selects from many choices her/his work preferences.

TIME REQUIRED

Approximately 50 minutes

GROUPS

Students work individually and in pairs

INSTRUCTOR PREPARATION

Read through this exercise in your manual and in the student's guide.

PROCEDURE

1. Announce the purpose of this exercise
2. Have students complete the exercise in their career planning guide. (15 minutes)
3. Have students meet in pairs to compare their answers and give reasons for their selection. (15 minutes)
4. View "Career Values: Environment" by Guidance Associates. Discuss the filmstrip using suggestions from the Discussion Guide. (20 minutes)

COMMENTS

You may want to comment to students that in planning for a career, knowing what our working preferences are is important. There may not be one job that meets all of one's working preferences; however, there may be jobs that meet more of them than others do. Some people value their working situation as much as the specific job itself. In any job the circumstances surrounding the job influence a person's satisfaction.

CAREER PLANNING: Exercise 14

WORK VALUES

"HOW I WANT TO LIVE"

PURPOSE

To increase the student's awareness of how s/he wants to use the time in her/his life. To see the relationship between the work one chooses and a total life style. To clarify what students want to do in their leisure time.

HELPING OBJECTIVES

The student identifies how s/he wants to use time.

MATERIALS

Student career planning guide

TIME REQUIRED

Approximately 1 hour

GROUPS

Students work individually and in 3's or 4's.

INSTRUCTOR PREPARATION

Read through the materials.

PROCEDURE

1. Announce the purpose of the exercise.

2. Have the student work independently to divide the clock into hours and to answer the questions. (20-25 minutes)

3. Have students meet in groups of threes or fours to compare and contrast their answers to these questions:

    Is the way you divided your time the same way you spend it now?

    Looking at all the divisions of time you made, how would you describe the total life you would lead? Where is the focus?

Looking at your future leisure time, what activities would you do in your free time? Are the things you do in free time also things you might do on a job?

4. Have students view "Career Values: Time" by Guidance Associates. Discuss the filmstrip using suggestions from the discussion guide. (20 minutes)

CAREER PLANNING: Exercise 15

WORK VALUES

"WHAT ARE MY REWARDS?"

PURPOSE

To assist students in focusing on what rewards they would like their future careers to provide. To keep these rewards in mind while considering alternative careers.

HELPING OBJECTIVES

The student identifies rewards s/he wants from a career.

MATERIALS

Student career planning guide

TIME REQUIRED

Approximately 55 minutes

GROUPS

Students work individually and in groups of 3's

INSTRUCTOR PREPARATION

Read through the exercise.

PROCEDURE

1. Announce the purpose of the exercise.

2. Have students work individually to complete the exercise. (10-15 minutes)

3. Have students meet in groups of threes to compare the rewards they considered very important. They should discuss why they feel that way. (15 minutes)

4. Have students view "Career Values: Chance-taking" by Guidance Associates. Discuss the filmstrip using suggestions from the discussion guide. (20 minutes)

CAREER PLANNING: Exercise 16

WORK VALUES

"A HEALTH CAREER?"

PURPOSE

To assist students in identifying the factors that may be influencing them to consider a future health career. To make clear the motivation of each student for choosing a health career.

HELPING OBJECTIVES

The student identifies reasons s/he is interested in a health career.

MATERIALS

Student career planning guide

TIME REQUIRED

Approximately 1 hour 10 minutes

GROUPS

Students work individually and in the total group

INSTRUCTOR PREPARATION

Read through the exercise.

PROCEDURE

1. Announce the purpose of the exercise to the students.
2. Have students answer the questions concerning a health career in their guides. (20 minutes)
3. Have students meet in the total group and ask students if they would volunteer some of their answers to each of these questions.
    a. How long have you thought about having a career in health.
    b. What got you interested in a health career?
    c. Who do you know that works in health?

d. Who are the people that most influence your career plans? How do they influence you?

e. What do you see yourself doing as a health worker?

f. How do the plans you've made for yourself now fit into becoming a health worker?

g. Does the fact that you are female or male influence your career choices? How?

h. What three things do you consider most favorable about having a career in health?

4. Have students view "Career Values: Commitment". Discuss the filmstrip using suggestions from the discussion guide. (20 minutes).

COMMENTS

This exercise may prove enlightening to the instructor for understanding some of the motivations students have for participating in the health careers course. You may also be able to tell what kinds of information you need to provide students to give them a total and realistic picture of a health career.

CAREER PLANNING: Exercise 17

WORK VALUES

"BEING A WORKER"

PURPOSE

To assist students in identifying favorable characteristics of a health worker. To help students assess those qualities they possess and those they could develop.

HELPING OBJECTIVES

The student identifies ten favorable characteristics of a health worker and identifies which traits s/he possesses or needs to improve.

MATERIAL

Student career planning guide

TIME REQUIRED

Approximately 20 minutes

GROUPS

Students work individually

INSTRUCTOR PREPARATION

Read through the exercise in their career planning guide. (20 minutes)

PROCEDURE

1. Announce the purpose of the exercise.

2. Have the students complete the exercise in their career planning guide. (20 minutes)

3* You may want to bring the class together and discuss how these characteristics are important to any worker. Talk about times you have observed or not observed these characteristics in workers and what is the difference. Ask students to share work experiences they have had and to indicate what characteristics the employer looked for in the employee.

*OPTIONAL

MAKING PLANS

PERFORMANCE OBJECTIVE

Given guidelines, the student sets realistic goals and writes a career plan.

HELPING OBJECTIVES

Describes her/his current career planning situation and identifies what decisions need to be made

Lists several occupations s/he may like to prepare for in the future

Write her/his career planning goals and objectives

Identifies ways to meet her/his career planning objectives

Writes an action plan with activities to be done, how they will be accomplished, and the dates

Describes how an unplanned event might change her/his plans for a career and what s/he would do.

Shares her/his plans with family, friends, fellow students or significant others

CAREER PLANNING: Exercise 18

MAKING PLANS

"DECISIONS TO MAKE"

PURPOSE

To assist the student in identifying the current state of her/his career plans in order to determine what decisions have to be made.

HELPING OBJECTIVES

The student describes her/his current planning situation.

MATERIALS

Student career planning guide

TIME REQUIRED

Approximately 45 minutes

GROUPS

Students work individually and in 2's or 3's

INSTRUCTOR PREPARATION

Read through this exercise thoroughly

PROCEDURE

1. Announce the purpose of the exercise to students.

2. Instruct students to think about a decision they need to make today or in the near future. It can be anything big or small. Have them write a brief statement of the decision in their guides. (2 minutes)

3. Ask students the following questions and have them write their answers in the appropriate blanks. (10 minutes)

   What is keeping you from making your decision?

   What are your choices?

   What are the consequences of each choice?

4. Have students complete the written exercise on their future plans. Students work individually. (20-25 minutes)

5. Have students meet in groups of twos or threes and share with each other the decisions they have to make or the things they still need to do. (15 minutes)

CAREER PLANNING: Exercise 19

MAKING PLANS

"KNOWING MY CHOICES"

PURPOSE

To review the many occupations the student has investigated throughout the year. To identify those occupations the student considers to be potential choices for her/his future.

HELPING OBJECTIVES

The student lists several occupations s/he may like to prepare for in the future.

MATERIALS

Student career planning guide

TIME REQUIRED

Approximately 30 minutes

GROUPS

Students work individually and in pairs

INSTRUCTOR PREPARATION

Read through the exercise.

PROCEDURE

1. Announce the purpose of the exercise.
2. Have students work individually to complete the written questions. (15 minutes)
3. Instruct students to meet in pairs. Have each student share with the others the three occupations s/he would consider most interesting and the reasons for her/his choices. (15 minutes)

CAREER PLANNING: Exercise 20

MAKING PLANS

"MY GOALS AND OBJECTIVES"

PURPOSE

To define goals and objectives. To set realistic goals for career planning. To establish objectives to reach stated goals.

HELPING OBJECTIVES

The student writes her/his career planning goals and objectives

MATERIALS

Student career planning guide

TIME REQUIRED

Approximately 40 minutes

GROUPS

Students work individually and in groups of 3.

INSTRUCTOR PREPARATION

Read through this exercise.

PROCEDURE

1. Announce the purpose of the exercise.
2. Have students read the material on goals and objectives. You may want to answer any questions concerning the definition of a goal and an objective. (5 minutes)
3. Have students complete the section on career goals and important goal. (15 minutes)
4. Tell students to meet in groups of three and each share her/his one important goal. The other two students should contribute all the ideas they can on ways to reach that goal. (15 minutes)
5. Instruct students to complete the section on writing objectives. (10 minutes)

6. Have students consider each objective and decide if it is difficult to reach or if it is easy. Put an x in the appropriate column. (5 minutes)

COMMENT

Throughout the process it may be relevant to explain to students that intentional career planning is valid but that a person needs to be realistic and flexible about goals and objectives. There are often limitations and influences (i.e., the job market) which must be a consideration in the continuous career planning process.

CAREER PLANNING: Exercise 21

MAKING PLANS

"AN ACTION PLAN"

PURPOSE

To make specific plans to meet career planning objectives. To think of ways to minimize difficulties that may arise in planning. To establish dates for various parts of the plan.

HELPING OBJECTIVES

The student identifies ways to meet her/his career planning objectives. The student writes activities, how they will be accomplished, and the dates.

MATERIALS

Student career planning guide

TIME REQUIRED

Approximately 55 minutes

GROUPS

Students work individually

INSTRUCTOR PREPARATION

Read this exercise thoroughly.

PROCEDURE

1. Announce the purpose of the exercise. Emphasize the importance of making specific plans to reach goals and objectives.

2. Have students refer to the objectives they have written in the previous exercise.

3. Instruct them to consider each objective. In the space indicated in the guide, have students write some specific plans of what they can do to reach their objectives. Students should especially consider the objectives they believe are difficult to reach and think about what they can do to make them less of a problem. (20 minutes.)

4. Have students consider the plans and decide if there is an order for them to be accomplished. If there is an order, which activity needs to be accomplished first, second...? Indicate that some plans may be long range and others short range. (5 minutes)

5. Have students fill in the planning chart in their guide with specific activities, how they will accomplish each and dates. (30 minutes)

6. (OPTIONAL) Have students view and discuss the film "Pack your Own Chute" by Ramic Productions.

CAREER PLANNING: Exercise 22

MAKING PLANS

"THE WHEEL OF CHANCE"

PURPOSE

To have students consider the possibility that unplanned for events could occur and affect their career plans. To emphasize that career plans must be flexible.

HELPING OBJECTIVES

The student describes how an unplanned event might change her/his plans for a career and what s/he could do.

MATERIALS

Student career planning guide

TIME REQUIRED

Approximately 30 minutes

GROUPS

Students work in groups of 3's or 4's

INSTRUCTOR PREPARATION

Read through the materials.

PROCEDURE

1. Announce the purpose of the exercise. Have students consider the possibility that unplanned for events could occur and affect their career plans.

2. Have each student write an event they hadn't planned on happening in each section of the wheel of chance in their Student Guide. (10 minutes)

3. Divide students into groups of three or fours. Without showing the wheels of chance, have students choose a number for each other from 1-6. The number a students gets will indicate the unplanned for event on her/his wheel of chance. (5 minutes)

4. Have each student share her/his unplanned for event and what s/he might do if it really happened. (15-20 minutes)

5. Wrap up the exercise with statement concerning the need to be flexible in making plans for the future.

CAREER PLANNING: Exercise 23

MAKING PLANS

"SHARING WITH OTHERS"

PURPOSE

To have students share their plans with others in order to affirm their plans and to receive comments.

HELPING OBJECTIVES

The student shares her/his plans with family, friends, fellow students, or significant others.

MATERIALS

Student career planning guide

TIME REQUIRED

Approximately 10 minutes (30 minutes if option included)

GROUPS

Students work individually

INSTRUCTOR PREPARATION

Read through the exercise.

PROCEDURE

1. Announce the purpose of the exercise.
2. Have each student think of someone that would be interested in her/his future career. Instruct students to make arrangements to meet with that person to talk about her/his career plans. This may be a friend, family member or another student.
3. Have students write questions that they want to ask that person about their plans. (10 minutes)
4. (OPTIONAL) Inform students that it is important that they complete this last step. You may want to take class time for students to share in twos or threes their plans. (20-30 minutes)

STUDENT CAREER PLANNING GUIDE

INFORMATION SHEET

This career planning guide is designed for your use in Health Occupations exploration. The goal is to help you to develop a realistic career plan to serve your personal needs.

KNOWING MYSELF

Through participation in the exercises in the section KNOWING MYSELF, you will have opportunities to become more aware of your personal interests, values, abilities and important experiences. Through individual and group work you will be able to form a total picture of yourself.

WORK VALUES

Through participation in the exercises in the section WORK VALUES, you will be able to clarify your attitudes about work. This will help you in making choices of an occupation you may want to pursue.

MAKING PLANS

Through participation in the exercises in the section MAKING PLANS, you will be able to make an action plan for your future career. This plan will include your personal goals and ways to reach them.

CAREER PLANNING: Exercise 1

KNOWING MYSELF

"MY LIFE PATH"

PURPOSE

To help you to identify important experiences in your life. To focus on your life in terms of past, present and future events.

DIRECTIONS

1. On the page titled "My Life Path", make a drawing that expresses your life path: past, present and future. Your drawings can take any form. The questions below may help you to find important events to include on your life path. Take time to answer the questions.
    a. What was the most significant event in your life from birth to age ten?
    b. What has been the most significant event in your life from age ten to the present?
    c. What has been your greatest success this year?
    d. What has been your greatest failure this past year?
    e. Who have been the most meaningful people in your life and when?
    f. What do you want your future to be like?
    g. How long do you want to live?
    h. Anything else?
2. Each of you share your life path with your group. You can share anything you feel comfortable sharing.
3. The other people in your group are to ask you questions about what seems important on your "life path".
4. Write down ideas about what is important to you.

V-53

MY LIFE PATH

CAREER PLANNING: Exercise 2

KNOWING MYSELF

"WHAT I LIKE TO DO"

PURPOSE

To help you in identifying activities that are important to you. To enable you to get to know other students through sharing interests.

DIRECTIONS

1. Think about the things that you enjoy doing and list as many as you can in the blanks on the following page. Include hobbies, talents, interests, activities, dreams... whatever is important to you.

2. Complete the squares accoring to the instructions at the top of each column.

3. Meet in your small groups and discuss these questions.

    a. Are the things you like most to do the ones you do most often or most recently?

    b. Are the things you like most to do things you can still do when you have a job?

    c. Are the things you like most to do ones that you choose to do or the ones you are told to do?

    d. What things have others listed that you would like to include on your own list?

LIST THE THINGS YOU LIKE TO DO (AT LEAST TEN)	NUMBER THESE IN ORDER OF IMPORTANCE	✓ CHECK THE ONES YOU HAVE DONE IN THE PAST YEAR	✓ CHECK THE ONES YOU HAVE DONE IN THE PAST 6 MONTHS	✓ CHECK THE ONES YOU DO EVERY DAY

✓CHECK THE ONES YOU DO ALONE	✓CHECK THE ONES YOU DO WITH ONE OTHER PERSON	✓CHECK THE ONES YOU DO WITH LOTS OF PEOPLE	✓CHECK THE ONES YOU WANT TO DO THROUGHOUT YOUR LIFE	✓CHECK THE ONES OTHER PEOPLE KNOW YOU LIKE TO DO	✓CHECK THE ONES YOU DO VERY WELL

CAREER PLANNING: Exercise 3

KNOWING MYSELF

"WHAT I DO BEST"

PURPOSE

To identify some of the resources, talents and abilities you possess. To share and receive information about your resources and other students' resources.

DIRECTIONS

1. Looking at the list on the board, the "Things You Like to Do!" from the previous exercise, and just thinking about yourself, write 10 abilities, resources or strengths you possess. Go ahead and BRAG, it doesn't hurt once in awhile! Write them down on the next page.
2. Look over your list and put x's by the three you think you do best and ✓ 's by the ones you would most like to use in your life or work.
3. Meet in your small groups and share the three things you do best.
4. Share the abilities you would most like to use in your life or future work. Discuss how you might use these abilities in work.
5. For each member in your group, write in her/his guide to complete the sentence, "One thing I think you do well is ______________________________." Sign your name.

WHAT I ______________________________ DO WELL (10 THINGS)
Your Name

	X	✓
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

(x) which three you do best.

( ) the ones you want to use in your life or in your future work.

One think I think you do well is

____
Signature

One thing I think you do well is

____
Signature

One think I think you do well is

____
Signature

CAREER PLANNING: Exercise 4

KNOWING MYSELF

"WHAT I VALUE"

PURPOSE

To assist you in looking at your values. To help you identify some of your personal values.

DIRECTIONS

1. View sound-slide program: "Clarify Your Values: Guidelines for Living" by the Center for Humanities, Inc.
2. Follow the instructions on the next page. Answer the questions as honestly as you can.

DIRECTIONS

The following is a list of values. Label the three values you believe are most important to you with +'s. Label the three values you believe are least important to you with -'s.

☐ SUCCESS
☐ FRIENDSHIP
☐ LOVE
☐ PLEASURE
☐ INNER PEACE
☐ POWER
☐ HAPPINESS
☐ LEISURE
☐ AMBITION
☐ KNOWLEDGE
☐ SPIRITUAL FULFILLMENT
☐ ADVENTURE
☐ WORLD PEACE
☐ EQUALITY
☐ HEALTH
☐ WEALTH

Which of the words would you like to associate with your future career?

____
____
____

These are some values that are often used to describe people:

LOVING
PATIENT
LOYAL
HONEST
SUCCESSFUL
CREATIVE
TRUSTFUL
HELPFUL
INDEPENDENT
BEAUTIFUL
FRIENDLY
RESPONSIBLE
CHEERFUL
DEPENDABLE
INTELLECTUAL

Choose the two values from the list that you consider most important. What do you do to show they are important?

VALUE	WHAT DO YOU DO?

Which values would you choose to describe yourself?

____

____

____

Which of these values to you think other people would use to describe you?

____

____

____

CAREER PLANNING: Exercise 5

KNOWING MYSELF

"A PICTURE OF MYSELF"

PURPOSE

To look at how you see yourself by drawing and describing yourself.

DIRECTIONS

1. On the next page make a drawing of yourself. Think about who you are and draw whatever images come to your mind. If you choose not to make a drawing, make a definition of yourself or collage by using pictures or any parts of a magazine. Assemble them into a representation of yourself.

2. Hang your drawings or collage on the walls. Walk around the room and see if you can guess who is represented in each.

3. In your small groups discuss the following:

   What did you draw? Describe your drawing.

   How are they different?

   How do you feel about your drawings?

4. Answer the question on the page "Who Am I."

5. Read the theme "Who Am I" and underline the important statements.

A PICTURE OF MYSELF

WHO AM I?

DIRECTIONS

Look at your drawings and fill in the blanks with words that best describe you. These are words that you associate with yourself.

I am ______________________________

I am ______________________________

I am ______________________________

One thing I wish I was is ____________________

____

One think I like about me is ____________________

____

One think I would like to change is ______________

____

WHO AM I?

If you were to write a description of yourself, would that description fit you wherever you went or with whomever you associate? Are you the same person with your boss as you are with your mother? Do you behave the same way with your instructor in school as you do with your friends on Saturday night? Do you behave the same way with all the people you know?

The answer to that question for most people is, "Probably Not." People and groups of people in your life expect different things of you. So, if you comply with the expectations of these different people and groups, you will probably behave a little differently with each of them. Your mother expects you to behave as a son or daughter; your instructor expects you to behave as a student; your boss expects you to behave as an employee. Your girlfriend expects you to behave as a boyfriend, or vice-versa. You are expected to play certain roles with certain people in your life, depending upon what they expect of you. No matter how hard you may concentrate on being "the same" in every situation, you are not permitted to be so.

In your roles, you are subject to many forces from your past experiences. Your parents and family, your education, your friends and the community in which you grew up all have helped to mold you into who you are NOW. Your associations and experiences in the past will influence you to behave in a certain way and give you some direction as to how you should act in most situations. But at times you may have to "ad lib" or "roll with the punches". Whether or not your behavior is acceptable is reported back to you by others. Some peoples' responses to your actions you value, others you don't. You are constantly looking for an answer to the question, "Am I who I think I am? Am I who you want me to be? How do I perform?"

In reality, you are a very complex person. You have a concept of who you are, your "real" self or "real" image. You get an idea of the kind of person you are from reactions people give you to your behavior. People around you constantly let you know whether they approve or disapprove of the way you act. You have a picture of yourself in relation to what you believe, who and what you like, what you are able to do or not do, and how well you get along with people.

You also have a concept of who you would like to be, your "ideal" image. Are you fairly satisfied with yourself, or would you prefer being someone quite different from your real image? If you are content with your real image, the roles you plan will be believable because you like yourself the way you are. But, if you would like to be someone different from who you really are, your roles will be confusing to people because you will attempt to behave like someone you really are not.

All the people in your life also have a concept of who you are in relationship to themselves. Each person you know expects you to behave a certain way with her/him. For example, your boss expects you to act like an employee, not like her/his son or daughter. In school, a female instructor expects a male to act like a student, not like her husband or boyfriend. As long as you behave according to the expectations of the people you are with, you will get along with them fairly well. If you do not act according to their expectations, you will confuse them, hurt them or make then feel uncomfortable, and your relationship with them will not be pleasant or satisfying.

So, who are you? Basically, you are a unique person, one of a kind! But your unique person has the ability to adapt to the expectations of the people in your life as well as to the changes in yourself during your life. And so, you play roles, your behavior varies depending upon your real image, the image you have of yourself and the image others have of you.

CAREER PLANNING: Exercise 6

KNOWING MYSELF

"A LOOK INTO THE FUTURE"

PURPOSE

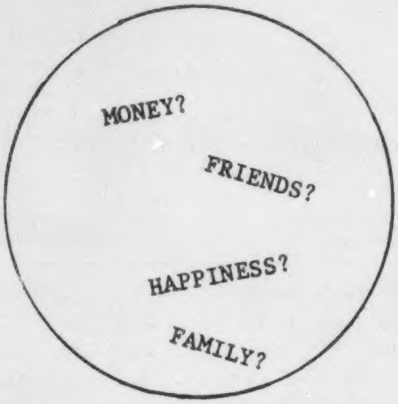
To look at what you want in your future and how much decision you have in what your future will be.

DIRECTIONS

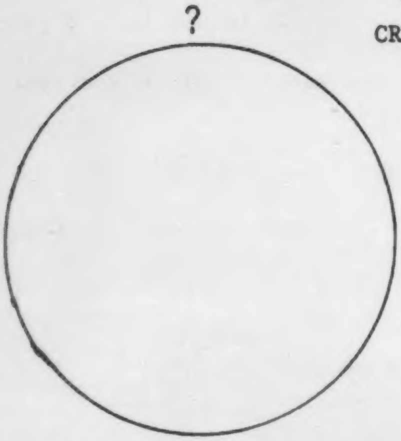
1. On the next page there is a crystal ball to help you see what you want in your future. Imagine what it will be like for you in 5 years. How old does that make you? ______ In the crystal balls on the next page, write or draw what you want to have happen in the next 5 years.
2. Discuss in your small groups what you have included in your future.
3. Place an x on the Influence Line where you fit.
4. Discuss in your small groups where you put yourself and why you did.

A LOOK INTO THE FUTURE

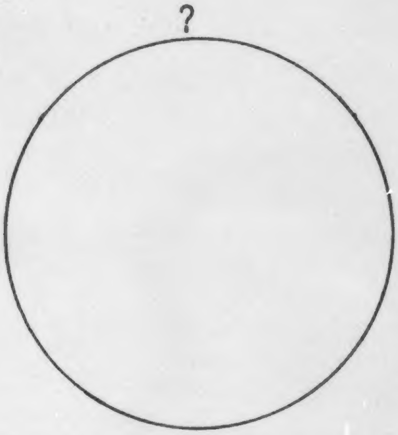
WHAT DO I WANT IT TO BRING?


MONEY?
FRIENDS?
HAPPINESS?
FAMILY?

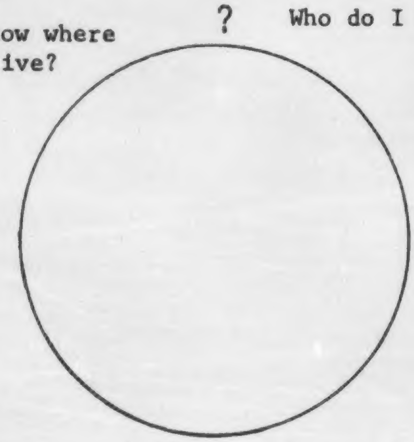
CRYSTAL BALL



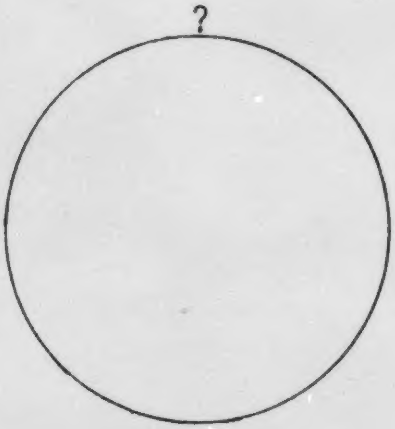
5 years from now where do I want to live?



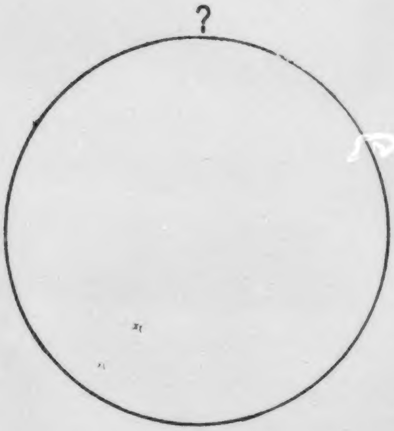
Who do I want to be with?



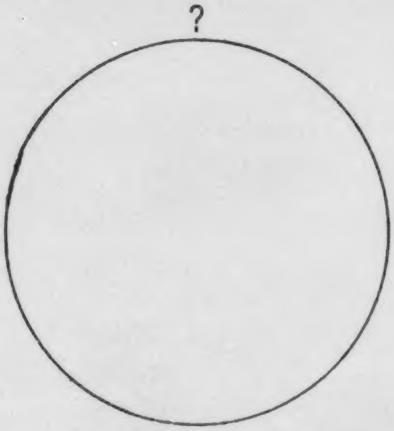
What do I want to be doing?



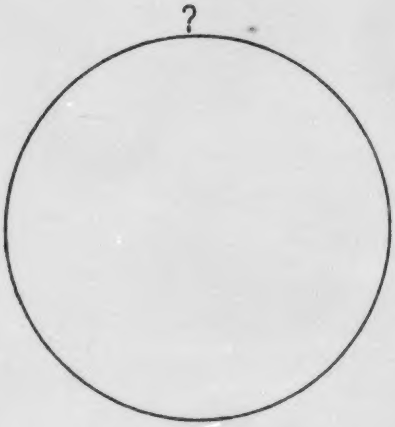
How much money do I want?



What about a family?



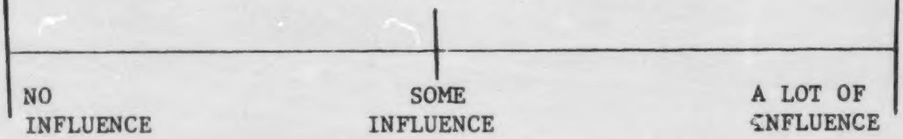
What is my success?



What else?

On the Influence Line below place an X on the point you believe shows how much influence you have in deciding your future.

THE INFLUENCE LINE


NO
INFLUENCE
SOME
INFLUENCE
A LOT OF
INFLUENCE

CAREER PLANNING: Exercise 7

KNOWING MYSELF

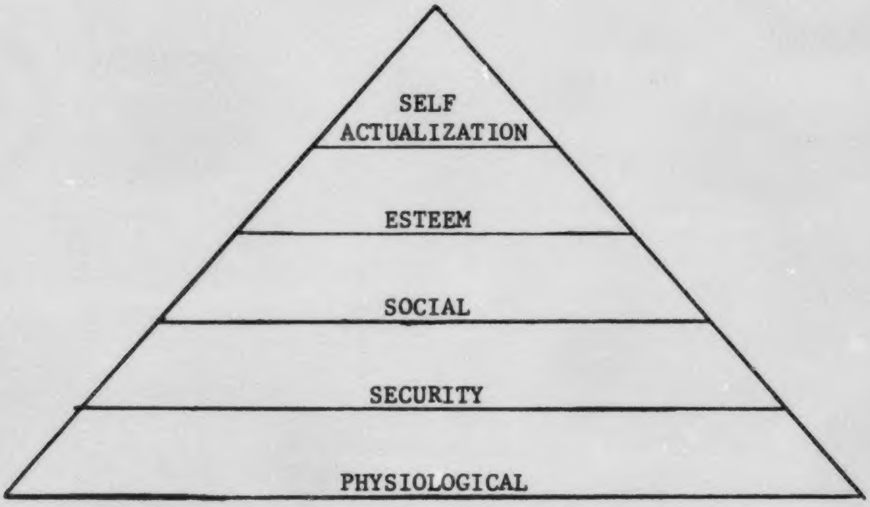
"WHAT I NEED"

PURPOSE

To assist you in determining what needs you have and how they are met now and in the future.

DIRECTIONS

1. Below you will find a drawing of Maslow's hierarchy of human needs. Answer the questions on the following page concerning your needs.


SELF ACTUALIZATION
ESTEEM
SOCIAL
SECURITY
PHYSIOLOGICAL

1. What needs do you have at the physiological level and how are they met?

PHYSIOLOGICAL NEEDS	How are they met?

2. What needs do you have at the security level and how are they met?

SECURITY NEEDS	How are they met?

3. What needs do you have at the social level and how are they met?

SOCIAL NEEDS	How are they met?

4. What needs to you have at the esteem level and how are they met?

ESTEEM NEEDS	How are they met?

5. What needs do you have at the self-actualization level and how are they met?

SELF-ACTUALIZATION NEEDS	How are they met?

6. After you have thought about these questions, answer them the best you can.

+What are the three most important needs you have at this point in your life?

+Do other people in your life know about your needs? Who?

+Are you doing something about your needs? What?

CAREER PLANNING: Exercise 8

KNOWING MYSELF

"SUMMING MYSELF UP"

PURPOSE

To review the exercises you have completed in the section KNOWING MYSELF in order to summarize what you have learned about yourself.

DIRECTIONS

1. Review the exercises that you have completed in the section of the guide KNOWING MYSELF. As you look through the previous exercises keep these questions in mind:

   I have been ____?

   I can ____?

   I like to ____?

   I am ____?

   I want to ____?

   I need ____?

   I am going to ____?

2. Fill in the addition problem on the following page. Complete each statement with answers that you have learned about yourself throughout your experiences in career planning. Some of the answers may be new learnings and others may be things that you have known for some time.

3. Complete the statement, my total self equals ______________. Look at all the answers you wrote above and write a short summary of yourself. This may be a combination of all the separate things that you have learned about yourself.

"SUMMING MYSELF UP"

Example:

$$\begin{array}{r} \text{YOU} \\ \underline{+\text{ME}} \\ \text{US} \end{array}$$

I have been +______________________

I can +______________________

I like to +______________________

I want to +______________________

I need +______________________

I am going to +______________________

TOTAL ______________________

(My total self equals) ______________________

____

CAREER PLANNING: Exercise 9

WORK VALUES

OCCUPATIONS AND CAREERS

PURPOSE

To help you to define the terms career and occupation. To assist you in understanding the difference between these terms.

DIRECTIONS

1. Participate in the total class session, listing words that you believe are connected with the terms career and occupation.
2. Write a definition that you believe is satisfactory for each term.
3. Write what you are presently doing to prepare for an occupation and career.

OCCUPATIONS AND CAREERS

I would say an occupation is:

____

____

____

I would say a career is:

____

____

____

To prepare for an occupation I am doing the following:

1.
2.
3.
4.
5.
6.

To prepare for a career I am doing the follwoing:

1.
2.
3.
4.
5.
6.

CAREER PLANNING: Exercise 10

WORK VALUES

"THIS IS THE JOB FOR ME"

PURPOSE

To help you identify what you are looking for in a job.

DIRECTIONS

1. On the following page write a description of the job you would consider ideal. Let your imagination go. You can do anything you want to. These questions may assist you:

   What are you doing?
   Who are you with?
   Does the job require training?
   What are your rewards?
   What are your work hours?
   What do you do outside of work?

2. When you have finished writing, circle the key words in your job description.

THE JOB I CONSIDER TO BE IDEAL

CAREER PLANNING: Exercise 11

WORK VALUES

"JOBS I'VE HELD"

PURPOSE

To assist you in describing your likes and dislikes about jobs that you've previously held.

DIRECTIONS

1. On the following page list three jobs that you have previously held. These jobs may include temporary ones, volunteer jobs, or assistance to other people.
2. For each job, list what you liked about the job and what you disliked.
3. Considering your answers in the "like" and "dislike" columns, write 3 reasons why you believe you liked your job and three reasons why you disliked your job.

JOB	WHAT I LIKED	WHAT I DISLIKED

Write three reasons why you think you liked the things you listed in the above column.

1.

2.

3.

Write three reasons why you think you disliked the things you listed in the above column.

1.

2.

3.

CAREER PLANNING: Exercise 12

WORK VALUES

"TRADITIONAL AND UNTRADITIONAL ROLES"

PURPOSE

To identify traditional and untraditional work roles our society defines for females and for males.

DIRECTIONS

1. Participate in the total class session on traditional and untraditional roles.
2. Write examples of the information obtained from the total class session on the page titled "Traditional and Untraditional Roles."

TRADITIONAL AND UNTRADITIONAL ROLES

TRADITIONAL	UNTRADITIONAL
Little Girls Grow Up To Be...	Little Girls Don't Grow Up To Be...
Little Boys Grow Up To Be...	Little Boys Don't Grow Up To To Be...

Review

*Star the statements that have most influenced you.

How have your career plans been influenced by traditional work roles?

CAREER PLANNING: Exercise 13

WORK VALUES

"MY WORK PREFERENCES"

PURPOSE

To increase your awareness of the situations you consider important which may be part of a future job. To help you select your working preferences.

DIRECTIONS

1. On the following page, put an X by the statements which best meet your personal preferences about work.
2. After completing the exercise, meet in pairs and compare your answers with another person's. Discuss the reasons for your selections.

MY WORKING PREFERENCES

_____ days
_____ nights
_____ shifts
_____ ?
_____ full time
_____ part time
_____ irregular hours
_____ ?
_____ specific hours
_____ according to my schedule
_____ flexible hours
_____ ?
_____ with people
_____ with papers
_____ with things
_____ with animals
_____ ?
_____ walking distance from my home
_____ 10 miles from my home
_____ 20 miles or more from my home
_____ ?
_____ in a uniform
_____ in clothes of my own choice
_____ ?

_____ with a partner
_____ with a team
_____ with myself
_____ ?
_____ with women
_____ with men
_____ with men and women
_____ ?
_____ in a small organization
_____ in a large organization
_____ ?
_____ under direct supervision
_____ under minimal supervision
_____ under no supervision
_____ as a supervisor
_____ ?
_____ in a small town
_____ in a small city
_____ in a large city
_____ ?

CAREER PLANNING: Exercise 14

WORK VALUES

"HOW I WANT TO LIVE"

PURPOSE

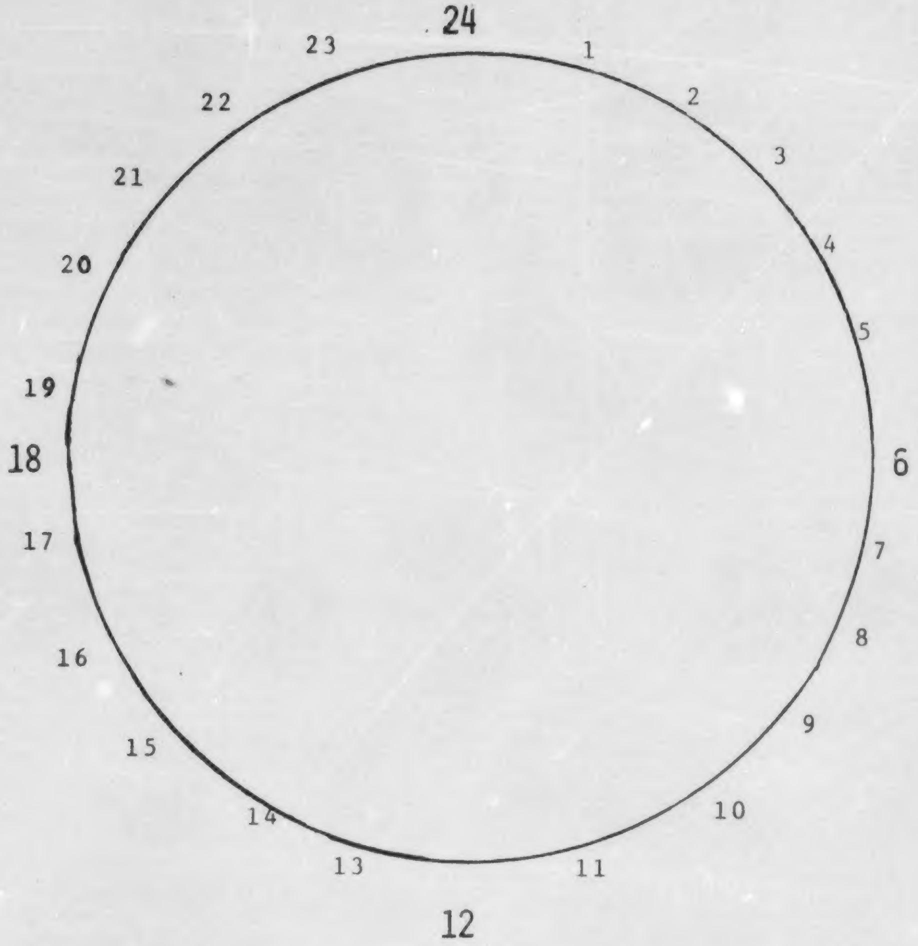
To assist you in defining how you want to use your time and to make clear what is important. To look at what you want to do in your leisure time.

DIRECTIONS

1. On the following page divide the 24 hour clock into number of hours you want to spend doing each thing listed. Keep in mind your future career. Then answer the indicated questions.

2. Meet in groups and discuss your answers.

24 HOUR CLOCK


24
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23

How many hours to sleep? ____________________
How many hours for work? ____________________
How many hours with friends? ____________________
How many hours alone? ____________________
How many hours for the community? ____________________
How many hours for the school? ____________________
How many hours for family? ____________________
How many hours for leisure? ____________________
How many hours for ____________________

Is the way you divided your time the same way you spend it now?

Looking at all the divisions of time you made, how would you describe the total life you would lead? Where is the focus?

Looking at your future leisure time, what activities would you do in your free time? Are the things you do in your free time also things you might do on a job?

CAREER PLANNING: Exercise 15

WORK VALUES

"WHAT ARE MY REWARDS?"

PURPOSE

To assist you in determining what benefits you consider important for your future career.

DIRECTIONS

1. Answer the questions on the following page as honestly as you can.

For each reward indicate if it is very important (1), important (2), or unimportant (3) to you in your future career.

PAID VACATIONS
MEET LOTS OF PEOPLE
DO WHAT I LIKE TO DO
LOTS OF MONEY
HAVE A TITLE
?

HELP OTHER PEOPLE
ADVENTURE
OPPORTUNITY TO BE CREATIVE
?
PLACES TO TRAVEL
HAVE SOCIAL STATUS

List all the rewards you marked very important in order of their importance.

1. ______________________________

2. ______________________________

3. ______________________________

4. ______________________________

CAREER PLANNING: Exercise 16

WORK VALUES

" A HEALTH CAREER?"

PURPOSE

To help you to identify the reasons why you think you might be interested in a health career.

DIRECTIONS

1. Answer the questions on the following pages regarding your ideas concerning a career in health.

2. Participate in the total class discussion.

A HEALTH CAREER?

HOW LONG HAVE YOU THOUGHT ABOUT HAVING A CAREER IN HEALTH?

WHAT GOT YOU INTERESTED IN A HEALTH CAREER?

WHO DO YOU KNOW THAT WORKS IN HEALTH?

WHO ARE THE PEOPLE THAT MOST INFLUENCE YOUR CAREER PLANS?
HOW TO THEY INFLUENCE YOU?

WHAT DO YOU SEE YOURSELF DOING AS A HEALTH WORKER?

CAREER PLANNING: Exercise 17

WORK VALUES

"BEING A HEALTH WORKER"

PURPOSE

To identify personal characteristics that are desirable for a person working in health.

DIRECTIONS

1. Follow the instructions on the following page.

IF YOU WERE AN EMPLOYER, WHAT THREE CHARACTERISTICS WOULD YOU LOOK FOR IN AN EMPLOYEE?

____

____

____

The following is a list of characteristics that are desirable for a successful health worker. Are the ones you listed included below? Check the degree you believe you possess each characteristic.

	DEGREE OF ABILITY		
CHARACTERISTIC	STRONG	AVERAGE	WEAK
WORKS WELL WITH OTHERS	____	____	____
TAKES ORDERS	____	____	____
LOOKS NEAT AND RESPECTABLE	____	____	____
ENTHUSIASTIC ABOUT WORK	____	____	____
TAKES INITIATIVE	____	____	____
CONCERN FOR OTHER PEOPLE	____	____	____
SHOWS A POSITIVE SELF-IMAGE	____	____	____
WILLING TO ADMIT MISTAKES	____	____	____
COOPERATIVE	____	____	____
PRACTICES GOOD HEALTH BEHAVIOR	____	____	____
COMMUNICATES EFFECTIVELY	____	____	____
DEPENDABLE	____	____	____
INDUSTRIOUS	____	____	____
POLITE	____	____	____

QUESTIONS:

CAN YOU THINK OF OTHER CHARACTERISTICS?

HOW MIGHT YOU IMPROVE YOUR WEAK CHARACTERISTICS?

(Answer these questions on the back of this sheet)

HOW DO THE PLANS YOU'VE MADE FOR YOURSELF NOW FIT INTO BECOMING A HEALTH WORKER?

DOES THE FACT THAT YOU ARE FEMALE OR MALE INFLUENCE YOUR CAREER CHOICES? HOW?

LIST THREE THINGS YOU CONSIDER MOST FAVORABLE ABOUT HAVING A HEALTH CAREER

CAREER PLANNING: Exercise 18

MAKING PLANS

"DECISIONS TO MAKE"

PURPOSE

To help you identify what your career planning situation is at the present time. To identify what decisions you want to make or things you need to do for career planning.

DIRECTIONS

1. Follow the instructions as indicated in the exercise.

FAST NOW! THINK OF A DECISION YOU HAVE TO MAKE TODAY
OR IN THE NEAR FUTURE. IT CAN BE ANYTHING BIG OR SMALL

I AM TRYING TO DECIDE IF ______________________________

____

WHAT IS KEEPING YOU FROM MAKING YOUR DECISION? FIRST I NEED TO

____

____

WHAT ARE YOUR CHOICES? (1) I CAN ______________________

____

(2) OR I CAN ____

____

(3) OR I CAN ____

____

WHAT ARE THE CONSEQUENCES OF EACH CHOICE?

(1) ____

____

____

(2) ____

____

____

(3) ____

____

____

____

STOP NOW! IMAGINE THAT YOU ARE GRADUATING FROM HIGH SCHOOL TOMORROW. THE TIME HAS COME FOR YOU TO START MAKING YOUR OWN FUTURE.

WHAT DO YOU SEE YOURSELF DOING?____________________

WHAT ARE REALISTIC LIMITATIONS ON YOUR FUTURE PLANS?________

WHAT HAVE YOU ALREADY DONE TO PREPARE FOR THE TIME AFTER GRADUATION?

WHAT DECISIONS DO YOU STILL HAVE TO MAKE OR WHAT DO YOU STILL HAVE TO DO?

( )______________________________

( )______________________________

( )______________________________

( )______________________________

( )______________________________

NUMBER THESE DECISIONS IN ORDER OF IMPORTANCE

FOR EACH DECISION YOU STILL HAVE TO MAKE OR THINGS YOU HAVE TO DO, LIST SOME OF YOUR ALTERNATIVES.

(1) I CAN ______________________________

OR I CAN ______________________________

OR I CAN ______________________________

(2) I CAN ______________________________

OR I CAN ______________________________

OR I CAN ______________________________

(3) I CAN ______________________________

OR I CAN ______________________________

OR I CAN ______________________________

(4) I CAN ______________________________

OR I CAN ______________________________

OR I CAN ______________________________

(5) I CAN ______________________________

OR I CAN ______________________________

OR I CAN ______________________________

CONSIDER THE CONSEQUENCES OF EACH ALTERNATIVE.

KEEP THE LIST OF DECISIONS TO MAKE AND THINGS TO DO FOR USE IN THE FOLLOWING EXERCISES.

CAREER PLANNING: Exercise 19

MAKING PLANS

"KNOWING MY CHOICES"

PURPOSE

To assist you in identifying occupations you may like to prepare for in the future.

DIRECTIONS

1. Review all the different health occupations you have investigated so far this year.
2. Make a list of all the health occupations you considered to be interesting.
3. Make a list of occupations you've considered other than health occupations.
4. Make a list of occupations other people say you should choose.
5. Choose three occupations you would most like to prepare for in the future.

HEALTH OCCUPATIONS I CONSIDER INTERESTING	OCCUPATIONS OTHER THAN HEALTH I CONSIDER INTERESTING

OCCUPATIONS PEOPLE I KNOW
SAY I SHOULD CHOOSE

____

____

____

____

CONSIDER YOUR DESCRIPTION OF AN IDEAL JOB. THEN LIST THE THREE OCCUPATIONS YOU HAVE LISTED THAT YOU WOULD MOST LIKE TO PREPARE FOR IN THE FUTURE.

OCCUPATION	WHY DID YOU CHOOSE IT?

CAREER PLANNING: Exercise 20

MAKING PLANS

"MY GOALS AND OBJECTIVES"

PURPOSE

To set goals and objectives for your future career.

DIRECTIONS

1. Read the materials and follow the given instructions.

GOALS AND OBJECTIVES

There are goals and there are objectives. Objectives are what we do to meet our goals. Goals are larger than objectives. At times a person's goals may not be clear and at other times a person's goals and objectives simply change. It is possible that some goals can be reached and that others can only be improved upon.

EXAMPLE

Goal:	To be in good health
Objectives:	Eat more nutritious meals Exercise more regularly Get more sleep and rest, etc.

CAREER GOALS

Now it's your turn. List the goals or "Important Things" that you would like to accomplish in planning for your future career. (You may want to review previous exercises.)

Choose from your list of goals the one you would most like to make plans to accomplish. Write it in this space. Be as clear as you can about what the goal is.

Share your most important goal with your group members. Get all the ideas you can from them on things you can do that will help you reach your goal. Write the ideas below.

DIRECTIONS: Copy your career goal in the indicated space.

MY CAREER GOAL: ____

____

____

____

OBJECTIVES: Review the ideas made by your group members and write all the things you can do to reach your goal. These are your objectives. Decide if each objective is easy or difficult to reach and mark an X in the appropriate column. (Be realistic about the objectives that may be difficult to reach and why there are limitations.)

Easy	Difficult	

CAREER PLANNING: Exercise 21

MAKING PLANS

"AN ACTION PLAN"

PURPOSE

To make specific plans for meeting career planning objectives.
To write activities you plan to do and the dates.

DIRECTIONS

1. Read over the list of objectives you developed on the previous page.

2. In the space provided under plans, write all the ideas you have for specific activities for meeting your objectives. For the objectives you marked difficult to reach you may have to work harder to think of ways to make them less of a problem.

3. Consider the plans you have written and decide if some activities need to be done before others. Some activities may be long range and others short range.

4. In the Planning Chart provided, write down your activities, how you will accomplish them, and the dates.

PLANS FOR ACTION

Consider the objectives you have written and write specific objectives. You may have to work harder to think of ways to make the difficult objectives less of a problem. Write your plan below.

FOR EXAMPLE: GOAL = Good Health

OBJECTIVE = Exercise more regularly

ACTIVITY = Join a basketball team

PLANNING CHART

GOAL ____

LIST ACTIVITIES	HOW WILL YOU ACCOMPLISH THEM	DATES WHEN WILL YOU DO THEM

CAREER PLANNING: Exercise 22

MAKING PLANS

"THE WHEEL OF CHANCE"

PURPOSE

To consider what you would do if significant changes took place that affected your career plans.

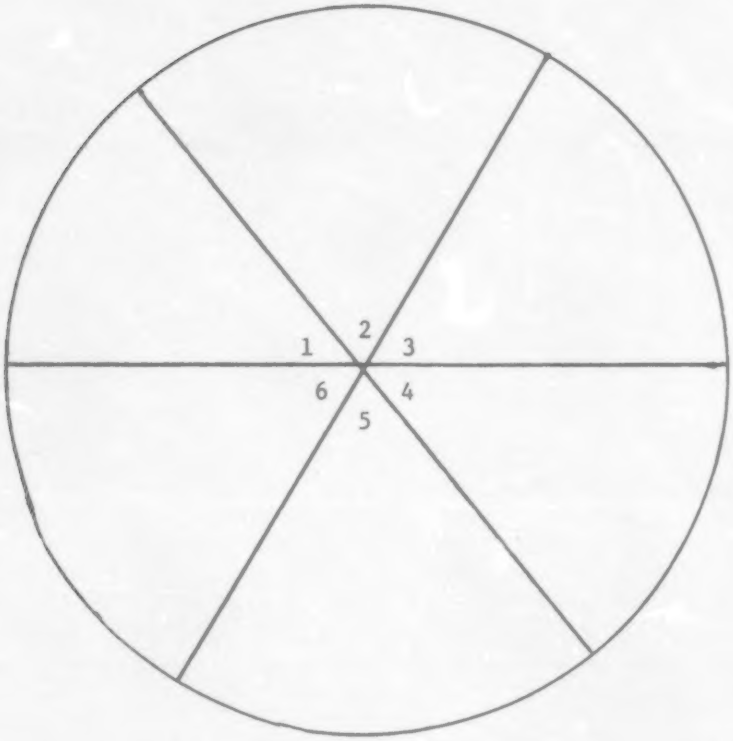
DIRECTIONS

1. Write one event that would significantly change your career plan in each section of the wheel of chance.

2. Discuss with students in your group what you would do if the chance they chose for you came true.

3. What are realistic limitations for your career plans?

WHEEL OF CHANCES



WHAT WOULD YOU DO IF NUMBER ( ) CAME TRUE?

CAREER PLANNING: Exercise 23

MAKING PLANS

"SHARING WITH OTHERS"

PURPOSE

To share your plan with a person or people of your choice in order to receive their comments.

DIRECTIONS

1. Think of someone whom you believe is interested in your future career. This may be someone from your family, a friend, or another student. Ask them if they would meet with you to talk about your career plans.

2. On the next page write questions that you want to ask that person about your plan.

QUESTIONS TO ASK

Write the questions below that you want to ask about your action plan.

FOR EXAMPLE: DO YOU THINK I HAVE LEFT SOMETHING OUT?

? ? ? ? ? ?

*ORGANIZATION AND GENERAL PLAN OF THE BODY

UNIT VI

UNIT OBJECTIVE

After completing this unit, the student will be able to identify terms, recognize organizational units of the body and locate body cavities. The student will also be able to identify body parts and cell parts on diagrams. This knowledge will be evidenced through application and by satisfactory completion of a unit test.

SPECIFIC OBJECTIVES

After completing this unit of instruction, the student will be able to:

1. Identify terms relating to body structure and organization.
2. Recognize organizational units of the body.
3. List and locate body cavities, and name the major organs found in each cavity.
4. List the systems of the body.
5. Identify the indicated parts on the diagram of a typical cell.
6. Identify the indicated parts on the diagram of the human body, lateral view.
7. Identify the indicated parts on the diagram of the human body, posterior view.
8. Identify the indicated parts on the diagram of cavities of the human body, side view.
9. Identify the nine regions of the abdomen on a diagram.

*Reprinted with permission of Occupational Curriculum Laboratory, East Texas State University from Anatomy and Physiology, Health Occupations Education, 1978.

ORGANIZATION AND GENERAL PLAN OF THE BODY

UNIT VI

SUGGESTED ACTIVITIES

I. Suggested Activities for the Instructor

  A. Provide students with objective sheet.

  B. Discuss unit and specific objectives.

  C. Provide students with information sheet.

  D. Discuss information sheet.

  E. Make and show transparencies.

  F. Distribute and discuss assignment sheets.

  G. Demonstrate procedures outlined in assignment sheets.

  H. Give test and evaluate results.

  I. Have students cut and build from illustration board 3-plane figures to illustrate the body planes.

II. Instructional Materials

  A. Objective sheet

  B. Information sheets

  C. Transparency masters

    1. TM-1--Typical Cell

    2. TM-2--Lateral View of Human Body

    3. TM-3--Posterior View of Human Body

    4. TM-4--Location of Body Cavities, Side View

    5. TM-5--Regions of the Abdomen

  D. Assignment sheets

    1. Assignment Sheet #1--Diagram of Typical Cell

    2. Assignment Sheet #2--Diagram of Lateral View of Body

    3. Assignment Sheet #3--Diagram of Posterior View of Body

    4. Assignment Sheet #4--Diagram of Body Cavities, Side View

    5. Assignment Sheet #5--Diagram of and the Regions of the Abdomen

E. Answers to assignment sheets

F. Test

G. Answer to test

II. References

A. Books:

1. Alyn, I. B. and C. P. Anthony. Structure and Function of the Body. 5th ed. St. Louis, Missouri: C. V. Mosby Co., 1976.

2. Anthony, C. P. Basic Concepts in Anatomy and Physiology. 3rd ed. St. Louis, Missouri: C. V. Mosby Co., 1974.

3. Anthony, C. P. and N. J. Kolthoff. Textbook of Anatomy and Physiology. 9th ed. St. Louis, Missouri: C. V. Mosby Co., 1975.

4. Francis, C. C. Introduction to Human Anatomy. 6th ed. St. Louis, Missouri: C. V. Mosby Co., 1975.

5. Memmler, Ruth Lundeen and Dena Lin Wood. The Human Body in Health and Disease. 4th ed. Philadelphia, Pennsylvania: J. B. Lippincott Co., 1977.

B. Films available from: The Arkansas Department of Health
Division of Public Health Education
4815 West Markham Street
Little Rock, AR 72201

C 169 "The Whole Body Manual"
M 100 "About the Human Body"
M 128 "About Your Body"

UNIT VI

ORGANIZATION AND GENERAL PLAN OF THE BODY

INFORMATION SHEET

I. Terms and definitions:

- A. Superior -- toward the head, upper, above
- B. Inferior -- toward the feet, lower, below
- C. Anterior -- front, in front of
- D. Posterior -- back, in back of
- E. Medial -- toward midline of a structure
- F. Lateral -- away from midline, toward side of
- G. Proximal -- toward or near trunk, near point of origin
- H. Distal -- away from point of origin
- I. Sagittal Plane -- divides structure into right and left sections
- J. Frontal Plane -- divides structure into posterior and anterior sections
- K. Transverse Plane -- divide structure into upper and lower sections
- L. Cells -- the smallest structural unit of the body
- M. Tissues -- organization of similar cells
- N. Organs -- organization of different kinds of tissues
- O. Systems -- organization of different kinds of organs

II. Organization of the body into structural units:

- A. Cells
  - 1. Structural organization
    - a. Size -- microscopic, but varies with type of cell

INFORMATION SHEET

b. Shape

c. Parts

1) Plasma membrane

2) Cytoplasm - the cell protoplasm outside the nucleus.

3) Organelles

a) Mitochondria - the very small rod-shaped structures or granules in the cytoplasm of cells which are responsible for oxidative reactions to release energy from the food materials.

b) Lysosomes - the membranous sacs of digestive enzymes produced by the Golgi bodies.

c) Ribosomes - the submicroscopic cell structures located in the cytoplasm; responsible for protein synthesis.

d) Endoplasmic reticulum - the submicroscopic membrane found in the cytoplasm which serves as the place of ribosome attachment in the cell.

e) Golgi apparatus - A vacuolar structure of the cell that "packages" secretions of cell products.

4) Nucleus

a) Contains chromosomes composed of DNA

b) Controls reproduction of cell

2. Basic cell functions

a. Reproduction

b. Oxygen intake

c. Metabolism

1) Catabolism--release of energy from food.

2) Anabolism--use of food by cell.

d. Growth

e. Response to stimulation

f. Movement

INFORMATION SHEET

B. Tissues--structural organization of similar cells

   1. Epithelial tissue

      a. Functions--protection, absorption, and secretion.

      b. Types--stratified and simple squamous.

   2. Connective tissue

      a. Functions--connection, support, and blood cell formation.

      b. Types--areolar, fibrous, adipose, cartilage, bone, blood, and hemopoietic.

   3. Muscle tissue

      a. Function--contraction

      b. Types--skeletal, smooth, and cardiac

   4. Nervous tissue

      a. Functions--transmit information, nervous impulses, and control the whole body.

      b. Types--

         1) Astrocytes--star shaped cells

         2) Microglia--small cells that move about in brain tissue

C. Organs--Organs are formed from various tissues that together perform a function. Examples are bones, muscles, brain, heart, stomach, or lungs.

D. Systems--Systems consist of a group of organs that work together. Systems form the body. The body systems are:

   1. Skeletal
   2. Muscular
   3. Circulatory
   4. Digestive
   5. Respiratory
   6. Integumentary
   7. Urinary
   8. Nervous (and sensory)
   9. Endocrine
   10. Reproductive

INFORMATION SHEET

III. Body Cavities

A. Dorsal

1. Cranial -- houses brain

2. Spinal -- houses spinal cord

B. Ventral

1. Thoracic

a. Located in the space above diaphragm, enclosed by rib cage.

b. Major organs - trachea, esophagus, heart and lungs.

2. Abdominal

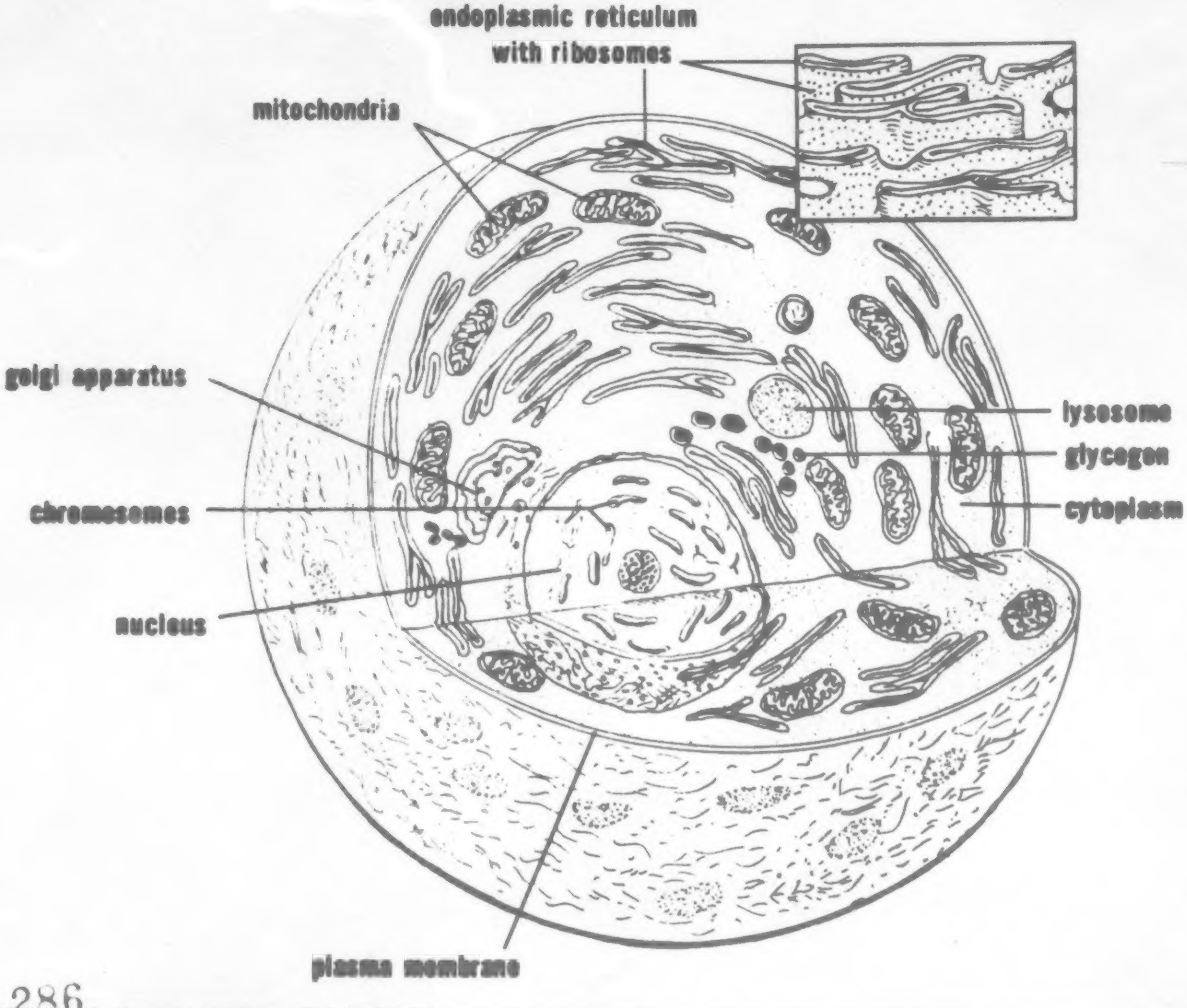
a. Nine regions include epigastric, umbilical, hypogastric, right and left lumbar, and right and left iliac, or inguinal

b. Four quadrants (no longer extensively used).

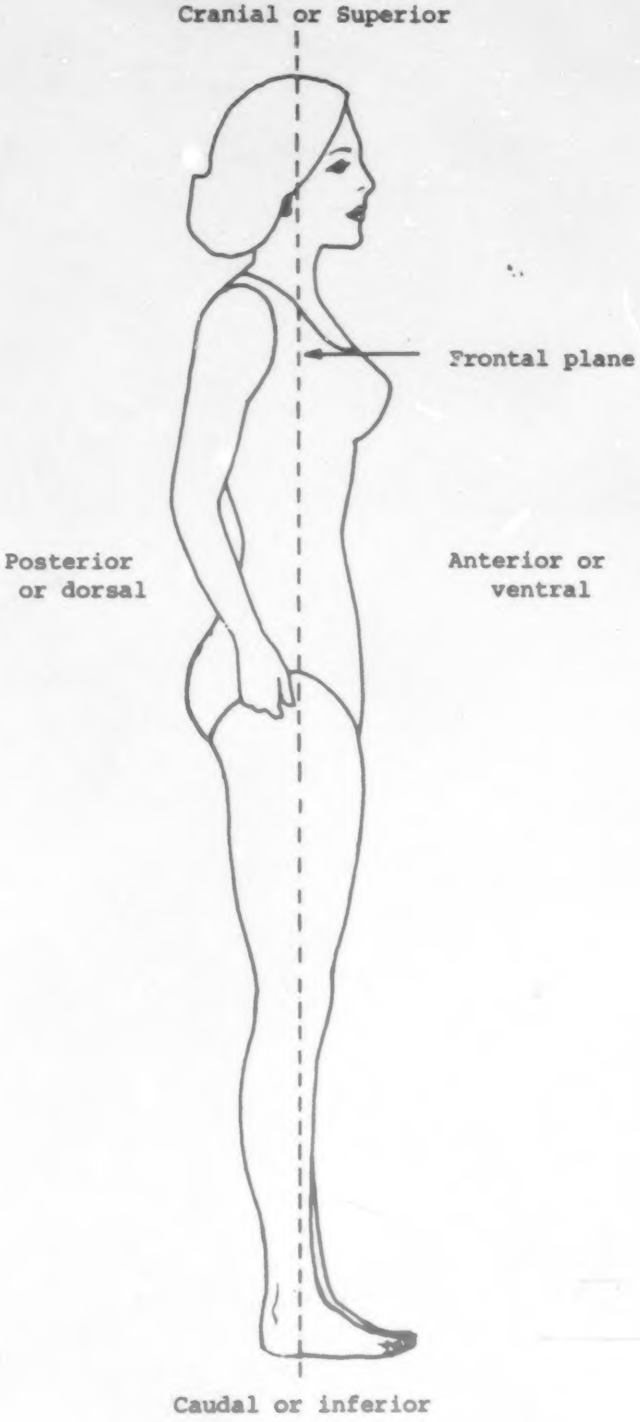
c. Major organs -- stomach, intestine, kidneys, liver, gall bladder, spleen, urinary bladder, some reproductive organs.

C. Dorsal cavities continuous, abdominal cavities separated by diaphragm

TYPICAL CELL

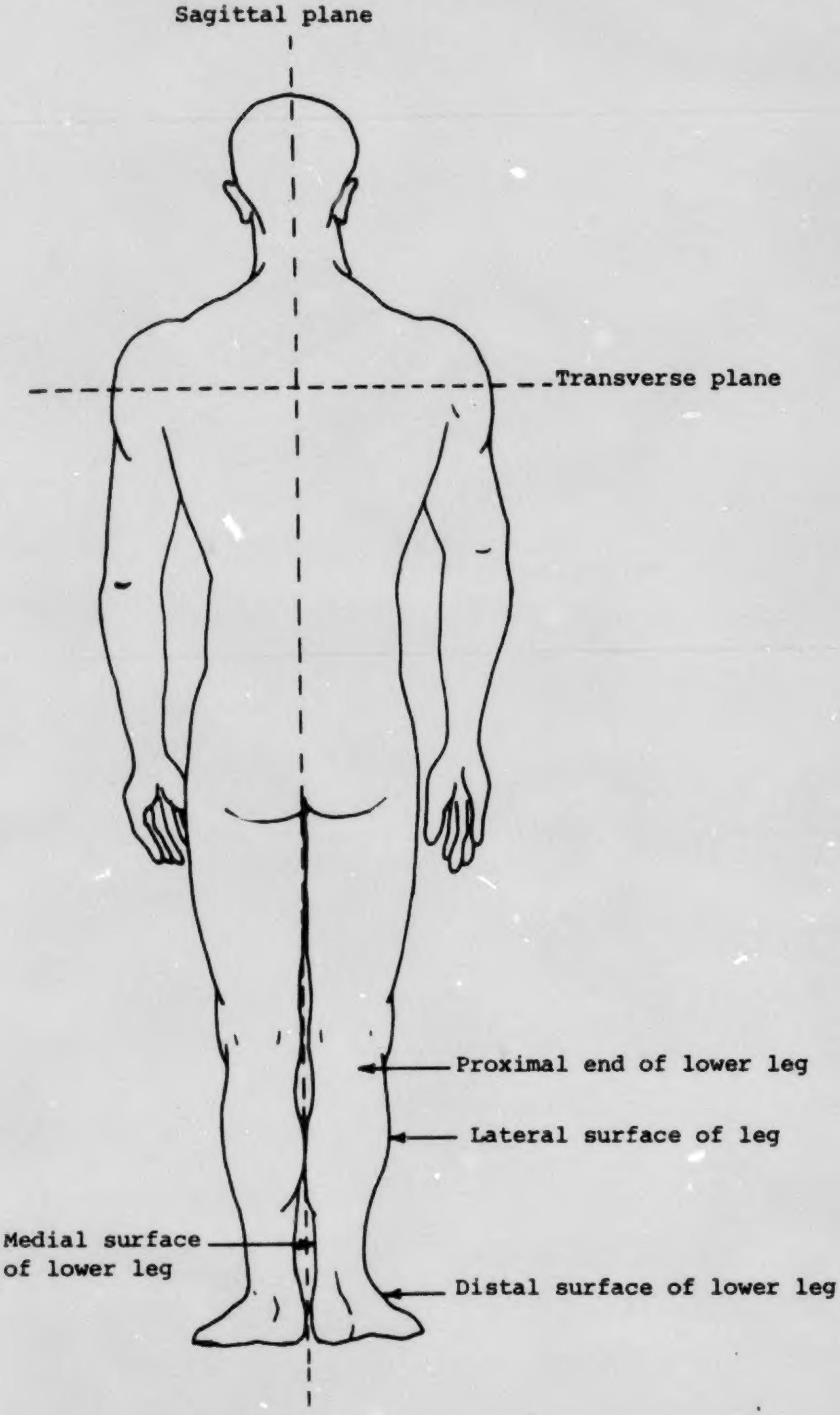

endoplasmic reticulum with ribosomes
mitochondria
golgi apparatus
chromosomes
nucleus
lysosome
glycogen
cytoplasm
plasma membrane

HUMAN BODY, LATERAL VIEW

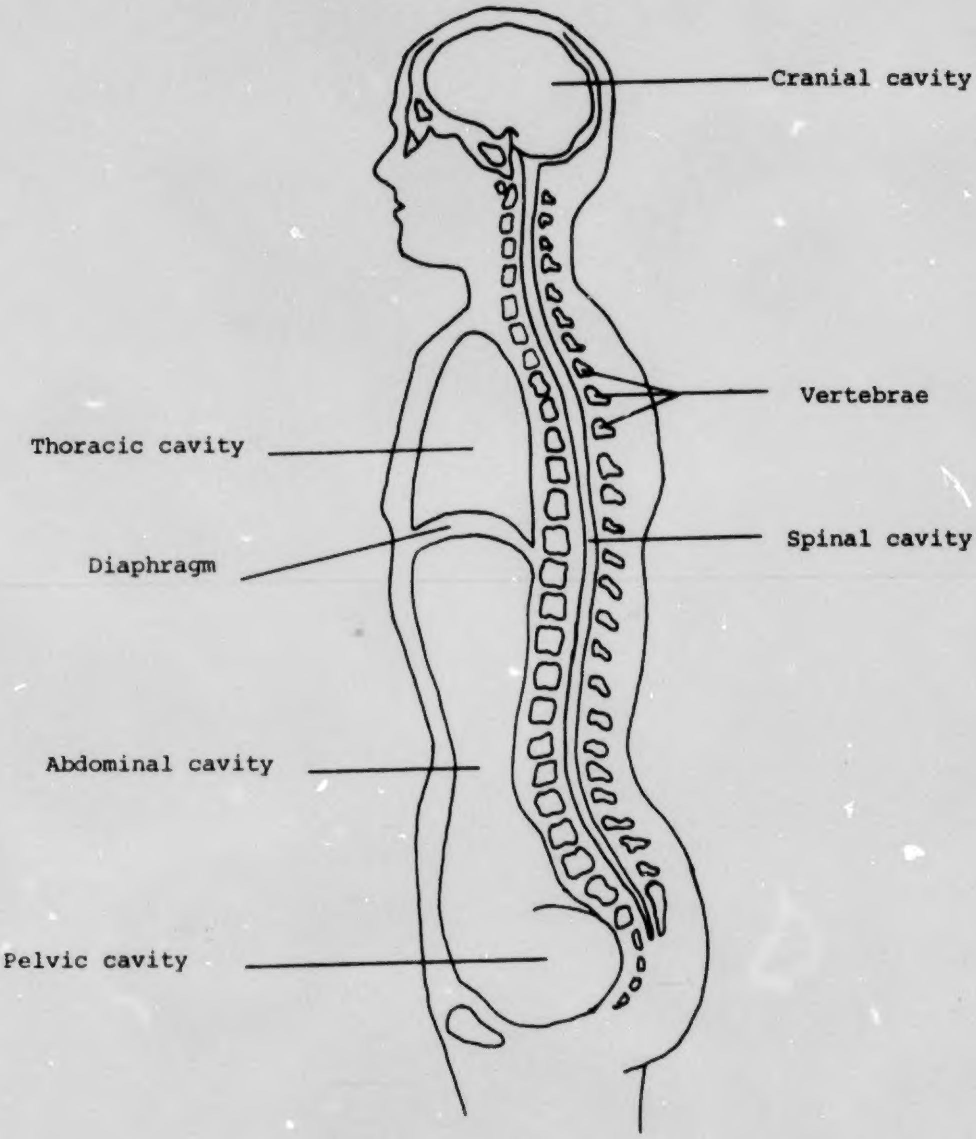

Cranial or Superior
Frontal plane
Posterior or dorsal
Anterior or ventral
Caudal or inferior

TM-2

HUMAN BODY, POSTERIOR VIEW

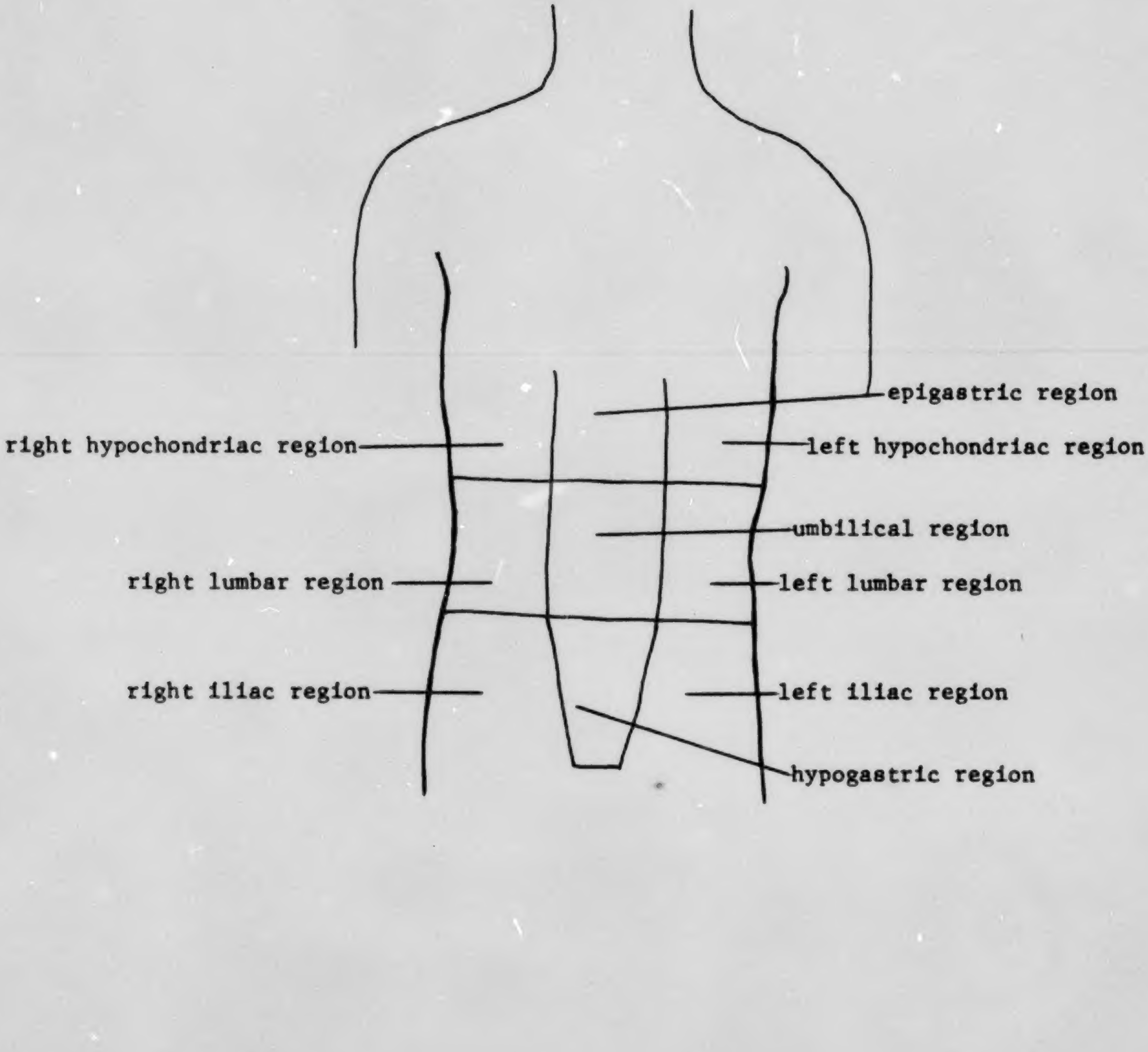

Sagittal plane
Transverse plane
Proximal end of lower leg
Lateral surface of leg
Medial surface of lower leg
Distal surface of lower leg

LOCATION OF BODY CAVITIES, LATERAL VIEW


Cranial cavity
Vertebrae
Thoracic cavity
Spinal cavity
Diaphragm
Abdominal cavity
Pelvic cavity

TM-4

REGIONS OF THE ABDOMEN


epigastric region
right hypochondriac region
left hypochondriac region
umbilical region
right lumbar region
left lumbar region
right iliac region
left iliac region
hypogastric region

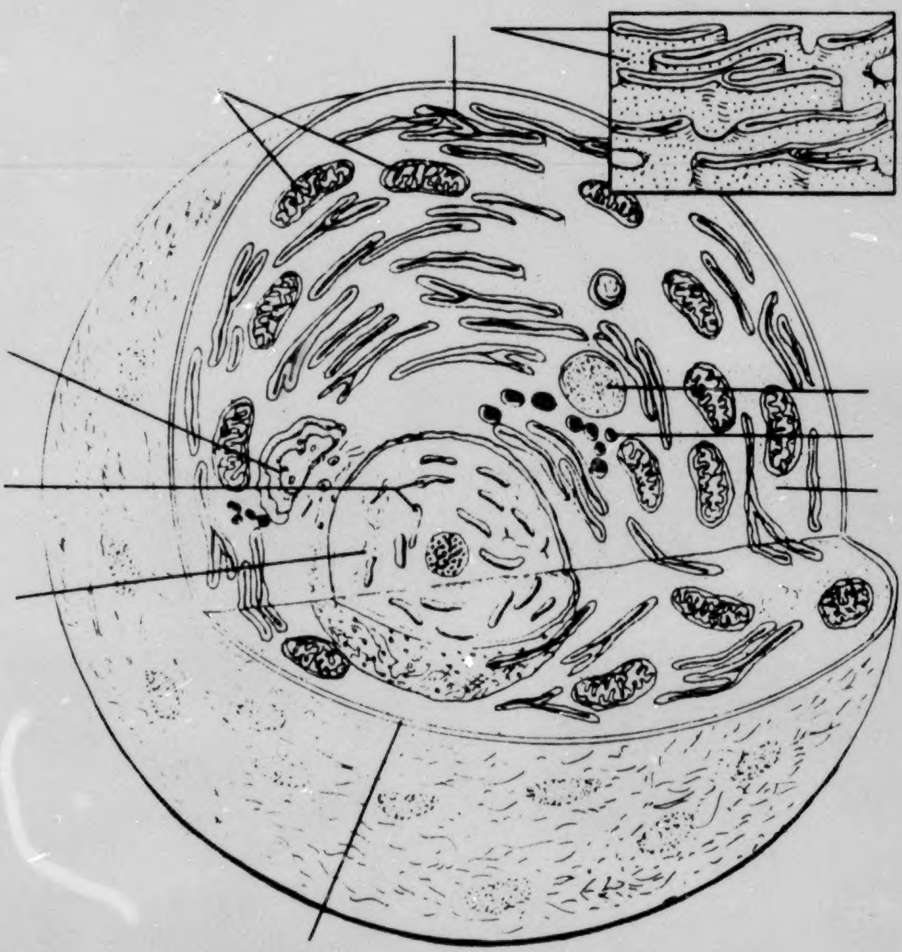
ORGANIZATION AND GENERAL PLAN OF THE BODY

ASSIGNMENT SHEET #1--LABEL DIAGRAM OF TYPICAL CELL

Directions: Label the following indicated parts of a typical cell:

- plasma membrane
- cytoplasm
- mitochondria
- lysosomes
- ribosomes
- endoplasmic reticulum
- Golgi apparatus
- nucleus

TYPICAL CELL



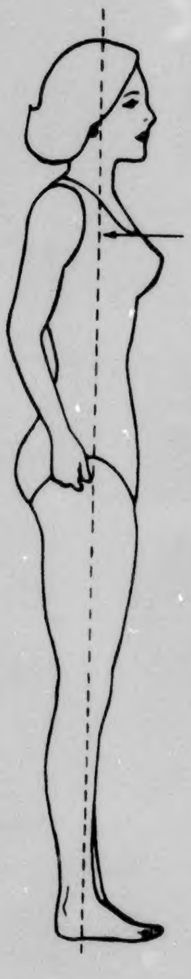
UNIT VI

ORGANIZATION AND GENERAL PLAN OF THE BODY

ASSIGNMENT SHEET #2--LABEL DIAGRAM OF LATERAL VIEW OF BODY

Directions: Label the indicated parts of the diagram using the following terms:

posterior or dorsal
caudal or inferior
frontal plane
cranial or superior
anterior or ventral



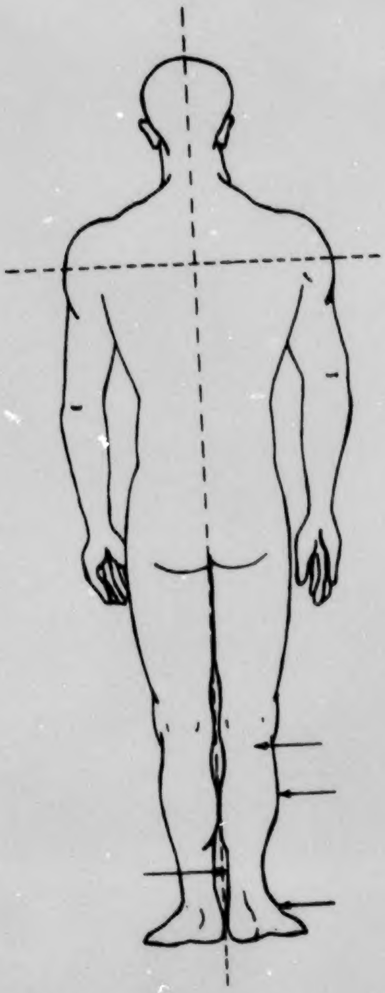
UNIT VI

ORGANIZATION AND GENERAL PLAN OF THE BODY

ASSIGNMENT SHEET #3--LABEL DIAGRAM OF POSTERIOR VIEW OF BODY

Directions: Label the indicated parts of the diagram using the following terms:

proximal end of lower leg
distal end of lower leg
sagittal plane
transverse plane
medial surface of leg
lateral surface of leg



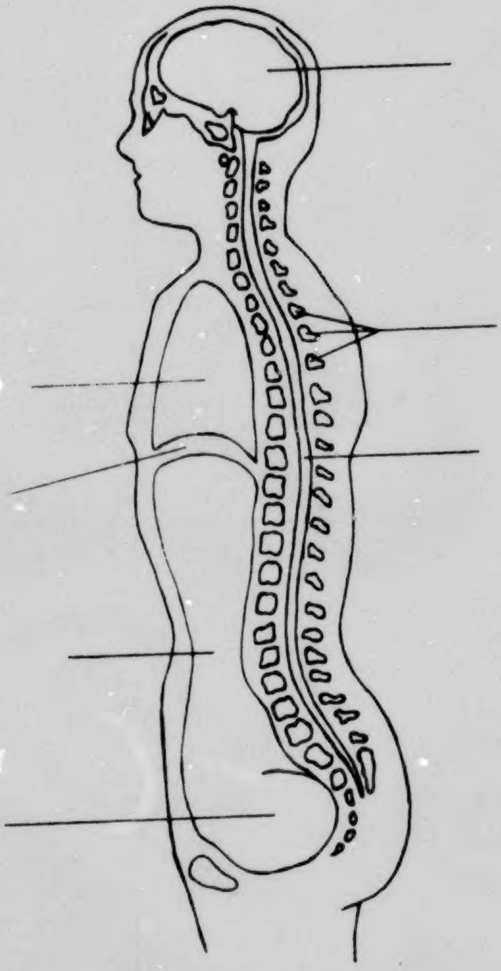
UNIT VI

ORGANIZATION AND GENERAL PLAN OF THE BODY

ASSIGNMENT SHEET #4--LABEL DIAGRAM OF BODY CAVITIES, SIDE VIEW

Directions: Label the indicated parts of the diagram using the following terms:

abdominal cavity
vertebrae
cranial cavity
pelvic cavity
spinal cavity
thoracic cavity
diaphragm



UNIT VI

ORGANIZATION AND GENERAL PLAN OF THE BODY

ASSIGNMENT SHEET #5--LABEL DIAGRAM OF THE REGIONS OF THE ABDOMEN

DIRECTIONS: Label the indicated parts of the diagram using the following terms:

epigastric region

left lumbar region

right iliac region

unbilical region

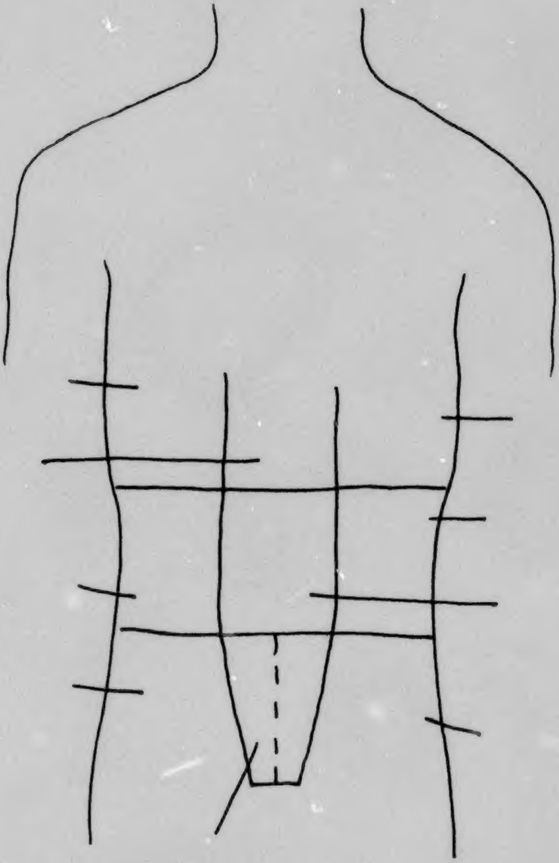
left iliac region

right hypochondriac region

right lumbar region

hypogastric region

left hypochondriac region



UNIT VI

ORGANIZATION AND GENERAL PLAN OF THE BODY

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1--Label Diagram of Typical Cell

See TM-1

Assignment Sheet #2--Label Diagram of Lateral View of Body

See TM-2

Assignment Sheet #3--Label Diagram of Posterior View of Body

See TM-3

Assignment Sheet #4--Label Diagram of Body Cavities, Side View

See TM-4

Assignment Sheet #5--Label Diagram of Regions of the Abdomen

See TM-5

UNIT VI

ORGANIZATION AND GENERAL PLAN OF THE BODY

UNIT TEST

1. Define the following terms:

   a. Superior--

   b. Inferior--

   c. Anterior--

   d. Posterior--

   e. Medial--

   f. Lateral--

   g. Proximal--

   h. Distal--

   i. Sagittal plane--

   j. Frontal plane--

   k. Transverse plane--

   l. Cells--

   m. Tissues--

   n. Organs--

   o. Systems--

2. a. Recognize organizational units of the body

   a. Check those terms in the following list that are cell parts

   _____ 1) nucleus

   _____ 2) shell

   _____ 3) mitochondria

   _____ 4) cytoplasm

   _____ 5) cylinder

_____ 6) endoplasmic reticulum

_____ 7) plasma membrane

_____ 8) reticulocyte

_____ 9) endomorph

_____ 10) chromosomes

b. List the functions of the cell (at least 5)

1.

2.

3.

4.

5.

c. Complete the following statements using these words:

bone & blood

control of body

contraction

stratified tissue

simple squamous tissue

astrocytes

support

blood cell formation

skeletal muscle tissue

smooth muscle tissue

protection

absorption

1. The function of epithelial tissue is secretion ________________, ________________ and ________________________________.

2. Two types of epithelial tissue are ____________________ and ____________________.

3. The function of connective tissue is connection, ________________ and ________________.

4. Types of connective tissue are areolar, fibrous, adipose, cartilage, homopoietic, ______________ and ______________.

5. The function of muscle tissue is ________________.

6. Two types of muscle tissue are cardiac ______________ and ______________.

7. The function of nervous tissue is to transmit information and nerve impulses and ________________.

8. Types of cells that form nervous tissue are microglias and ______________.

d. Define organ

e. Define system

f. Complete the following sentences:

1) Cells form ________________.

2) Tissues form ________________.

3) Organs form ________________.

4) Systems form ________________.

3. Match the organs with their correct body cavity.

a. Cranial cavity
b. Abdominal cavity and pelvic cavity
c. Spinal cavity
d. Thoracic cavity

_____ 1. lungs
_____ 2. spinal cord
_____ 3. stomach
_____ 4. brain
_____ 5. liver
_____ 6. heart
_____ 7. kidneys
_____ 8. trachea

4. List the systems of the body.

____
____
____
____
____
____
____
____
____
____

5. Label the following parts on a diagram of a typical cell. (See diagram.)

plasma membrane
cytoplasm
mitochondria
lysosomes
ribosomes
endoplasmic reticulum
Golgi apparatus
nucleus

6. Label the following parts on the diagram of the lateral view, human body. (see diagram.)

   frontal plane

   caudal or inferior

   cranial or superior

   posterior or dorsal

   anterior or ventral

7. Label the following parts on the diagram of the posterior view of human body. (See diagram.)

   distal end of lower leg

   medial surface of leg

   transverse plane

   sagittal plane

   lateral surface of leg

   proximal end of lower leg

8. Label the following parts on the diagram of the cavities of the human body, side view. (See diagram.)

   cranial cavity

   vertebrae

   spinal cavity

   thoracic cavity

   diaphragm

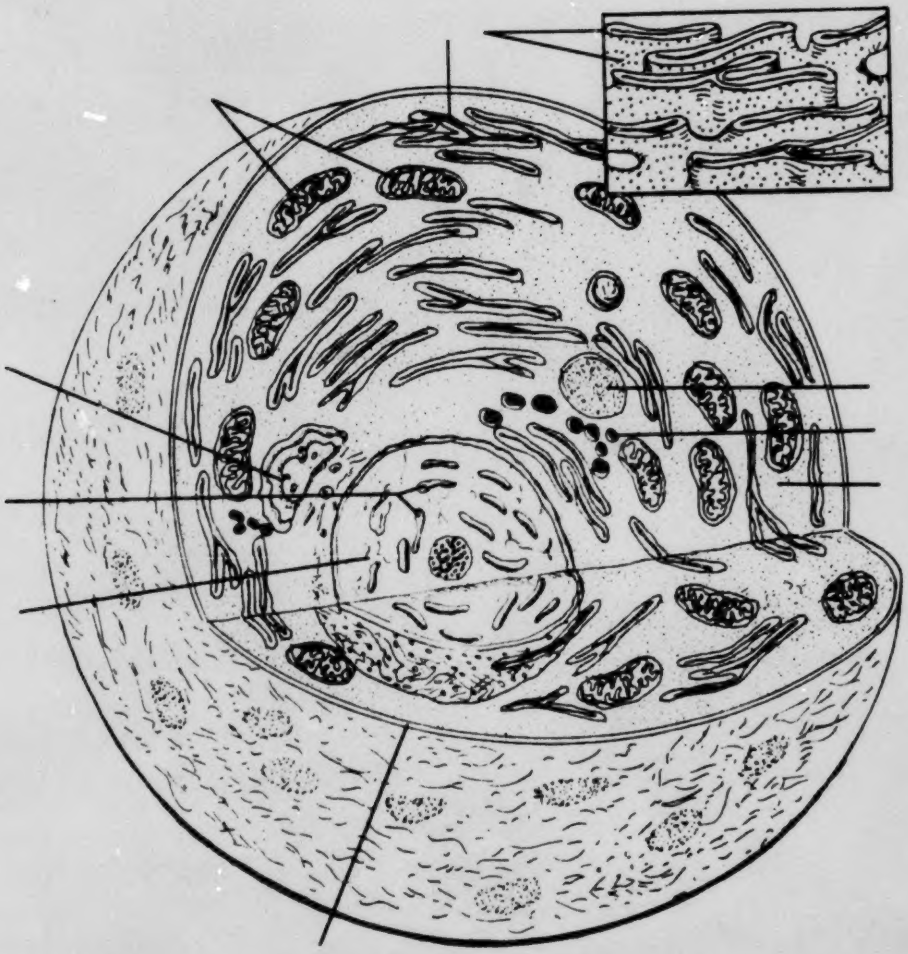
   abdominal cavity

   pelvic cavity

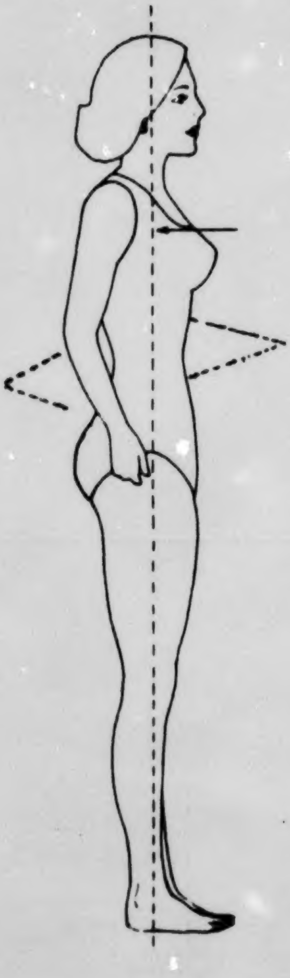
9. Label the nine regions of the abdomen. (See diagram.)

(Note: If activities #5-#9 have not been completed prior to the test, ask the instructor when they should be completed.)

TYPICAL CELL



LATERAL VIEW, HUMAN BODY



POSTERIOR VIEW OF HUMAN BODY

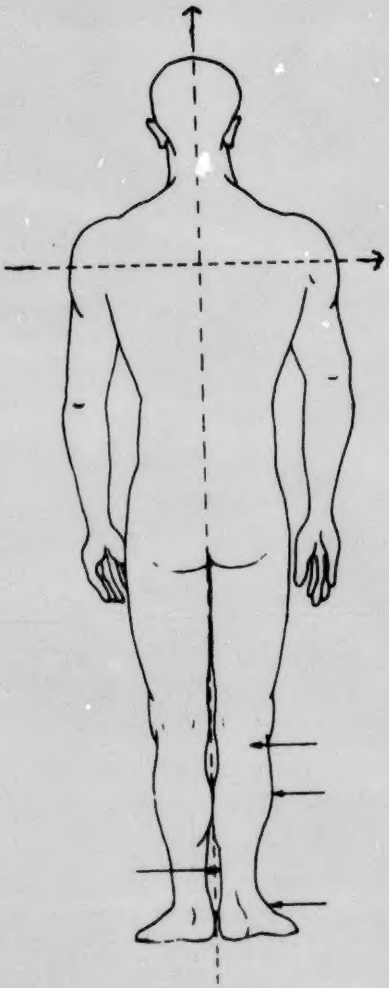
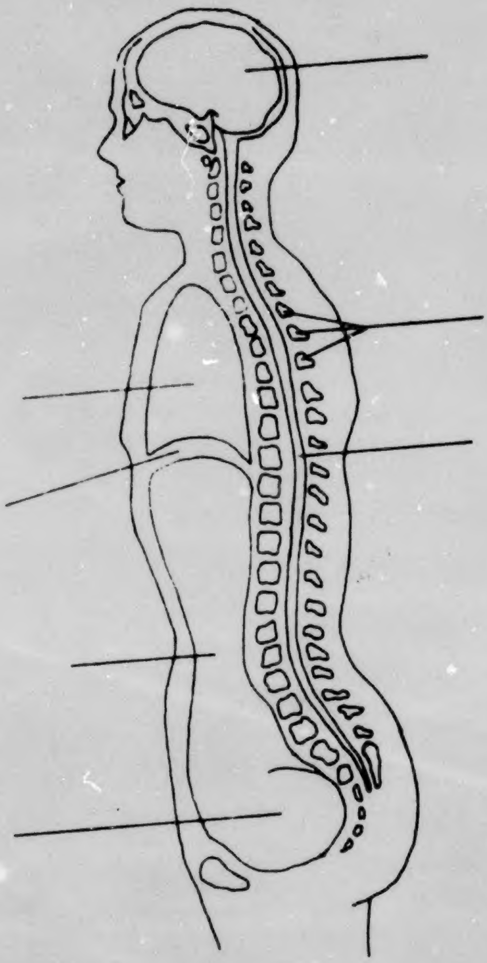


DIAGRAM OF CAVITIES OF HUMAN BODY, SIDE VIEW



UNIT VI

ORGANIZATION AND GENERAL PLAN OF THE BODY

ANSWERS TO UNIT TEST

1. a. Toward the head, upper, above

   b. Toward the feet, lower, below

   c. In front of, front

   d. In back of, back, behind

   e. Toward midline of body

   f. Away from midline, toward side of

   g. Toward or near trunk, near point of origin

   h. Away from point of origin

   i. Divides the body into right and left sections

   j. Divides the body into posterior and anterior sections

   k. Divides structure into upper and lower sections

   l. The smallest structural unit of the body

   m. Organization of similar cells

   n. Organization of different kinds of tissues

   o. Organization of different kinds of organs

2. a.

   __✓__ 1) Nucleus

   _____ 2) Shell

   __✓__ 3) Mitochondria

   __✓__ 4) Cytoplasm

   _____ 5) Cylinder

   __✓__ 6) Endoplasmic reticulum

   __✓__ 7) Plasma membrane

_____ 8) Reticulocyte

_____ 9) Endomorph

__✓__ 10) Chromosomes

b.

1) Reproduction

2) Oxygen intake

3) Metabolism

  a) anabolism

  b) catabolism

4) Growth

5) Response to stimulation

6) Movement

c.

1) Protection, absorption

2) Stratified, simple squamous

3) Support, blood cell formation

4) Bone, blood

5) Contraction

6) Skeletal, smooth

7) Control the whole body

8) Astrocytes

d. An organ is an organization of different kinds of tissue.

e. A system is the largest structural unit of the body; an organization of different kinds of organs.

f.

1) Tissues

2) Organs

3) Systems

4) Body

3. D 1.

C 2.

B 3.

A 4.

B 5.

D 6.

B 7.

D 8.

4. Skeletal

Muscular

Circulatory

Digestive

Respiratory

Integumentary

Urinary

Nervous (and Sensory)

Endocrine

Reproductive

5. See transparency master TM-1.

6. See transparency master TM-2.

7. See transparency master TM-3.

8. See transparency master TM-4.

9. See transparency master TM-5.

FIRST AID
UNIT VII

UNIT OBJECTIVE

After completing this unit, the student will be able to demonstrate Standard First Aid treatment. This knowledge will be evidenced by satisfactory completion of the American Red Cross Multimedia Standard First Aid course.

SPECIFIC OBJECTIVES

After completing this unit, the student will be able to:

1. Become certified in Red Cross Multimedia. Be able to demonstrate skills to cope with:

   a. Mouth-to-mouth breathing
   b. Obstructed airway
   c. Heart attack and stroke
   d. Direct pressure, elevation, pressure points
   e. Tourniquet
   f. Wounds and shock
   g. Poisoning
   h. Burns
   i. Bandaging - closed spiral, open spiral, figure eight, fingertip, cravat, triangle, arm sling
   j. Head injuries, internal injuries, gunshot wounds
   k. Injuries of the eye
   l. Infection, tetanus, animal bites
   m. Splints - upper arm, forearm, ankle, kneecap
   n. Fractures, sprains, strains
   o. Fainting, epilepsy, other sources of convulsions
   p. Ill effects of heat and cold
   q. Escaping from fire
   r. Electrical emergencies
   s. Exposure to radiation
   t. Obtaining help in an emergency
   u. Drag by shoulders, blanket drag
   v. Lifts and carries - two-person carry, carry by extremities, improvised litter, three-person hammock carry, eight-person lift, litter carry
   w. Rescue and transfer

FIRST AID
UNIT VII

SUGGESTED ACTIVITIES

I. Suggested Activities for the instructor:

   A. Provide students with objective sheet.

   B. Discuss unit and specific objectives.

   C. Schedule first aid course with local American Red Cross representative.

   D. Provide materials and books if necessary.

   E. Evaluate performance of students

II. Instructional Materials

   A. Objective sheet

   B. Student workbooks from American Red Cross

III. Unit References

   A. American Red Cross. Standard First Aid and Personal Safety. Garden City, New York: Doubleday and Company, Inc., 1979.

   B. American Red Cross. Multimedia Standard First Aid. 1978.

IV. Additional Resources

   A. Filmstrips

      1. "What to Do in an Accident." Available from Trainex Corporation, P. O. Box 116, Garden Grove, CA 92642.

      2. "This is an Emergency." Available from Trainex Corporation.

      3. "Poison!" Available from Trainex Corporation.

      4. "Methods of Cardiopulmonary Resuscitation," (#329). Available from Trainex Corp.

      5. "The New Pulse of Life." Available from St. Paul Fire and Marine Insurance Company, Loss Prevention Department, 385 Washington Street, St. Paul, Minnesota 55102.

FIRST AID
UNIT VII

B. Pamphlet

1. "Emergency Measures in Cardiopulmonary Resuscitation." American Heart Association, 1973.

C. Films

Available through local American Red Cross chapter, local Heart Association, or local fire department.

Following films available through: The Arkansas Department of Health, Division of Public Health Education, 4815 West Markham Street, Little Rock, AR 72201

E 121 "First Aid Now!"
E 160 "First Aid Action"
E 163 "First Aid on the Spot"
E 164 "First Aid Quiz - Saving a Life"
E 165 "First Aid Quiz - Treating Injuries"

HUMAN RELATIONS
UNIT VIII

UNIT OBJECTIVE

After completing this unit, the student will be able to exhibit an understanding of reality orientation, stress and reacting to illness and death. The student will also participate in activities that will aid in understanding him/herself and to communicate with others. This knowledge will be evidenced through demonstration and by satisfactorily completing a unit test.

SPECIFIC OBJECTIVES

After completing this unit, the student will be able to:

1. Discuss the history of human relations.
2. Interview class members.
3. Complete a personal inventory.
4. Demonstrate how to own your feelings by making "I" statements.
5. Rate feelings to words.
6. Become aware of how feelings are expressed through statements.
7. Compile a personal bill of rights.
8. Assess your real and ideal self.
9. Distinguish assertive, non-assertive and aggressive behavior.
10. Demonstrate an understanding of defense mechanisms.
11. List seven defense mechanisms.
12. Develop an awareness of the weakness of verbal communication.
13. Distinguish facial cues in nonverbal communication.

14. List six types of non-verbal communication.
15. List four ways to improve your listening ability.
16. Recognize roadblocks to helpful listening.
17. Recognize and make active listening responses.
18. Establish the difference between eustress and distress.
19. List the three general classes of the major causes of stress.
20. Identify your stressors.
21. Demonstrate an understanding of a relaxation technique in stress management.
22. List the five steps in the grieving process.
23. State how illness affects children and older people.
24. Assess their reactions to grief.
25. State considerations of death.
26. Examine definitions of death.
27. Assess his/her attitudes and views on death.
28. Recognize responsive behavior in a reality orientation program.
29. Identify some of the skills, attitudes and areas of knowledge needed in a reality orientation team.

HUMAN RELATIONS
UNIT VIII

SUGGESTED ACTIVITIES

I. Suggested activities for the instructor:

   A. Provide students with objective sheet.

   B. Discuss unit and specific objectives.

   C. Provide students with information sheet.

   D. Discuss information sheet.

   E. Provide information for students to use in completing assignment sheets.

   F. Have six to eight students participate in a demonstration to illustrate how information may be changed, rearranged, or lost as a message is passed from one person to another. Select a message which is fairly complex and takes at least one minute to repeat.

      - Students 1 and 2 should be located in a room separate from the rest of the group.
      - Have Student 1 verbally give a message to Student 2. Record the message as it is given.
      - Have Student 1 leave the room. Call Student 3 into the room to receive the message from Student 2.
      - Have Student 2 verbally give the message to Student 3. Record the message as it is given.
      - Repeat this procedure until the message has been relayed to each student involved in the demonstration.
      - Play back the recorded messages to the entire class. Note and discuss changes in content, changes in words, times, and names, additions, and deletions that occurred each time the message was relayed from one student to the next. Discuss how these changes might relate to such factors as the sender's personality, his/her understanding of the situation, and the evaluation of the message receiver.

G. To illustrate that each person sees and remembers the same situation differently and that people communicate their perceptions of the same scene differently, obtain an illustration or photo containing numerous objects or activities. Select three to five students to participate in the following demonstration.

- Give each student a copy of the illustration. Ask them to leave the room to study the illustration, instructing them not to discuss the contents of the illustration among themselves.
- One at a time, have each student return to the room and describe the illustration to the rest of the class. As each description is given, have the class take notes.
- At the conclusion of the demonstration, show the illustration to the entire class. Discuss any major differences in the various descriptions. Was the illustration what the class expected to see based on the descriptions? What did the activity show about how a person's individual perception influences his/her communication of a given situation?
- Show the filmstrip The Receiving Process as a follow-up to this activity.

H. Have the students react to the following:

1. List the different roles you have in life. Discuss or describe how your behavior differs according to the different roles. Discuss or describe how illness would affect your roles.
2. Describe some of the behaviors you think might accompany a disturbance in body image in an adolescent male football player who had had a leg amputated.
3. What differences would you expect between a 25 year old and a 75 year old woman, both of whom are convalescing from the same illness and have been in bed for a week?

I. Invite a resource person from your community to your class and discuss topics of your choice related to death. The following are suggestions:

1. What functions does religion have as it relates to death?

2. What might be spiritual needs of people related to death?

3. How do different cultures and groups of people express death as a spiritual experience?

4. What are beliefs and doctrines of different faiths concerning death?

J. Feelings about death need not be described in words only. The arts are full of mood pieces, rendered in color or line or musical tones, that convey an unmistakable impression of death.

In this activity, ask students to draw an "impression" of death. Provide each student with art paper and crayons, felt markers, or colored pencils. Ask them to use the materials to convey an idea, on paper, of how they feel about death. Stress that the important things are feeling and idea -- not virtuoso artistic talent. Also mention that any style, from realistic to abstract, is acceptable. For students who are absolutely intimidated by the idea of drawing a word picture -- an essay of no more than 250 words -- could be assigned. When the drawings or essays are complete, let each student show or read his work to the class. Ask other students for their impressions of the works.

K. Divide the class into five groups, and ask each group to write a short script for a dialogue between a terminally ill patient and his/her close friend or relative. Each of the five dialogues should deal with a different one of the five phases through which a dying patient passes -- shock, rage, bargaining, depression, acceptance. When the scripts are completed and workable, ask the class to enact the playlets. Have two different actors for each dialogue. Allow ten minutes for the pairs of actors to discuss and prepare their roles. Then let students present the plays in the proper sequence, with time after each for comments and discussion.

L. Invite a clinical psychologist or other resource person to speak to your class on stress and stress management (biofeedback).

M. Survey the class to determine how many students have been hospitalized. Ask these students to discuss the following:

- Were they afraid? If so, what were some of their concerns?
- Were they treated with concern by hospital personnel? Were procedures explained to them?
- Were their parents allowed to stay with them?
- What was their most memorable experience while hospitalized?

N. Lead a class discussion on each of the following hypothetical situations:

- A small child is hospitalized for a tonsillectomy. What could be done to make the child feel more at ease?
- A 30-year-old divorced woman with two pre-school children is admitted to the hospital for surgery. What kind of personal worries might she have?
- A 15-year-old boy has recently lost his right hand in a corn picker. He was a very good art student and played center for the basketball team. What might be done to help him adjust to this loss and find some new interests?

O. Ask an occupational therapist to speak to the class about rehabilitation procedures.

P. Invite a priest, minister, or rabbi to discuss the religious aspects of illness and the special needs of the terminally ill individual.

Q. Give test

II. Instructional Materials

A. Objective sheet.

B. Information sheet.

C. Assignment sheets.

1. Assignment Sheet #1
   Learning About Class Members
2. Assignment Sheet #2
   Knowing Myself - A Personal Inventory
3. Assignment Sheet #3
   "I" Messages
4. Assignment Sheet #4
   Rating Feelings to Words
5. Assignment Sheet #5
   Feelings
6. Assignment Sheet #6
   Building Assertiveness - Your Personal Bill of Rights
7. Assignment Sheet #7
   Assertiveness - Looking at Your Real and Ideal Self
8. Assignment Sheet #8
   How Well Can You Distinguish Assertive, Non-Assertive and Aggressive Behavior?
9. Assignment Sheet #9
   Defense Mechanisms
10. Assignment Sheet #10
    Pass It On - A Communication Game
11. Assignment Sheet #11
    Non-Verbal Communication: Facial Cues
12. Assignment Sheet #12
    Active Listening
13. Assignment Sheet #13
    Active Listening Responses
14. Assignment Sheet #14
    Identify Your Stressors
15. Assignment Sheet #15
    Alternate Nostril Breathing - A Relaxation Technique

16. Assignment Sheet #16
    Reacting to Grief

17. Assignment Sheet #17
    Defining Death

18. Assignment Sheet #18
    Your Attitudes and Views on Death

19. Assignment Sheet #19
    Responsive Behavior in a Reality Orientation Program

20. Assignment Sheet #20
    Becoming a Member of a Reality Orientation Team

D. Answers to Assignment Sheets

E. Test

F. Answers to Test

III. Unit References

A. Clark, Carolyn Chambers, Assertive Skills for Nurses. Wakefield, Mass.: Contemporary Publishing, Inc., 1978.

B. Herman, Sonya J., Becoming Assertive: A Guide for-Nurses. New York, New York: D. Van Nostrand Co., 1978.

C. Chenever, Melodie, Special Techniques in Assertiveness Training for Women in the Health Professions. St. Louis, Missouri: The C. V. Mosby Company, 1978.

D. Collins, Mattie, Communication in Health Care: Understanding and Implementing Effective Human Relationships. St. Louis, Missouri: The C. V. Mosby Company, 1977

E. Hall, Edward, The Hidden Dimension. Garden City, New York: Doubleday and Company, Inc., Anchor Books Edition, 1969.

F. Fast, Julius, Body Language. New York: Pocket Books, 1971.

G. Milliken, Mary Elizabeth, Understanding Human Behavior. Albany, New York 12205: Delmar Publishers, Inc., 1969.

H. Hailer, Harold H., Communication Games. San Jose, California: The Lansford Publishing Company, 1973.

I. Gordon, Alice K., Games for Growth; Educational Games in the Classroom, Palo Alto, California: Science Research Associates, 1970.

J. Harrison, Randall P., Beyond Words: An Introduction to Nonverbal Communication. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1974.

K. Smith, Voncile M. and Bass, Thelma A., Communication for Health Professionals. Philadelphia: J. B. Lippincott Company, 1979.

L. Meares, Bob, An Aid for Increasing Counselors' Affective Vocabulary. Fayetteville, Arkansas: Arkansas Rehabilitation Research and Training Center, University of Arkansas, April, 1973.

M. Kubler-Ross, Elisabeth, On Death and Dying. New York: The Macmillan Company, 1969.

N. Kubler-Ross, Elisabeth, Death - The Final Stage of Growth. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1975

O. Health Occupations Education Units of Instruction Volume II, Occupational Curriculum Laboratory, East Texas State University, Commerce, Texas, 1979.

P. Minnesota Secondary Health Occupation Curriculum Guidelines, Division of Vocational-Technical Education, Minnesota Department of Education.

Q. Curriculum Guide for Health Occupations Education. Illinois Office of Education, Department of Adult, Vocational and Technical Education.

R. Selye, Hans, The Stress of Life. New York, New York: McGraw-Hill Book Company, Inc., 1956.

S. McQuade, Walter and Aikman, Ann, Stress: What It Is, What It Can do to Your Health, How to Fight Back. New York, New York: E. P. Dutton and Company, Inc., 1974.

T. Brown, Barbara B., Stress and the Art of Biofeedback, New York, New York: Harper and Row, 1977.

U. Hicks, Dorothy J., Innes, Barbara S.,and Shores, W. Louise, Patient Care Techniques, First Edition. Indianapolis, Indiana: The Bobbs-Merrill Company, Inc., 1975.

V. Girdano, Daniel and Everly, George, Controlling Stress and Tension: A Holistic Approach. New Jersey: Prentice-Hall, Inc., 1979.

W. Guide for Reality Orientation. Tuscaloosa, Alabama: Veterans Administration Hospital, February, 1970.

X. Lehman, Esther. Doing It Better. Nursing, March, 1974. Pages 61-62.

IV. Additional Resources

Audio-Visuals:

A. "Gramp: A Man Ages and Dies." Sunburst Communications, Inc., Pleasantville, New York 10570, 1976.

B. "Living With Dying." Sunburst Communications, Inc., Pleasantville, New York 10570, 1973.

C. "Perspectives on Death." Perspectives on Death, P.O. Box 213, DeKab, Illinois 60115, 1972.

D. "The Dying Child: Focus on Family" and "The Dying Child: Focus on Child." Concept Media, P.O. Box 19542, Irvine, California 92714.

E. "Effective Listening"
"Effective Speaking"
"Non-Verbal Barriers to Communication"
"Orientation"
"The Receiving Process"
"The Sending Process"
"Verbal Barriers to Communication"
Trainex Corporation
P.O. Box 116
Garden Grove, California 92642

HUMAN RELATIONS
UNIT VIII

INFORMATION SHEET

I. Industry's interest in human relations

  A. Western Electric Company's experiment

    1. The Western Electric Company sought ways to increase the productivity of its employees.

    2. An experiment was devised to determine if the amount of light in the working area affected productivity.

      a. First, special equipment was installed to provide better lighting.

      b. Second, special equipment was installed that provided less light. Productivity remained high.

      c. Finally, the lighting was returned to the original level. The high level of productivity was maintained.

    3. When the experimenters completed their work, they removed all the special equipment and left the work area.

    4. As the employees found that the experiment was complete, their productivity returned to the lower level at which they had worked before the experiment began.

  B. Conclusions from the experiment

    1. The Western Electric Company concluded that their employees increased their productivity as long as they felt the owners cared about them. The installation of special equipment indicated concern.

    2. Productivity decreased after the experiment because the employees felt that the owner's only interest in them was to make sure they worked.

INFORMATION SHEET

C. Effects of experiment

1. From this study, employers realized that emphasis on workers was important for productivity.

2. This study helped to open a new era in business management, with emphasis on human relations.

II. Understanding yourself and others

A. Find out what you know and don't know about yourself (refer to Assignment Sheet # 2).

B. Be aware of your feelings.

1. Owning your feelings

What can we do when another person's behavior is a problem to us? The problem actually belongs to us and not to the other person. We could try to get the other person to change her/his behavior by telling her/him how to change, or by making suggestions or subtle hints, or by giving advice. But we've already seen that these approaches often do not produce the results we want. Often they make the other person feel that we are judging or accusing her/him. When a person feels accused, her/his usual response is to defend her/himself as she/he is, rather than to change. A person who feels threatened is too wrapped up in her/his own feelings to be concerned about our feelings.

There is no 100% sure method or technique to get another person to behave in a certain way. So we're really playing a game of chance, and it is risky. But there is a way of getting others to change that tends to minimize defensive reactions and maximize the chances that they will change their behavior. We can do this by owning our feelings, or, to use different words, by sending an "I" message. When we send an "I" message we admit that we are the owners of our feelings; we do not accuse the other person of wrongdoing. An "I" message clearly shows that we know the feeling is our feeling, and that it is quite separate from the events or actions that stimulated the feeling.

INFORMATION SHEET

How do we "own" our feelings?

To own our feelings we make an "I" message. An "I" message has three parts:

a. We tell the other person how we feel.
("I feel ____________)
(a feeling word)

b. We describe what the other person did that makes us feel this way. (...when you do ____________...)

c. We explain why the other's action makes us feel the way we do. (... because ________________________.")

For example, ("I feel annoyed) (when you put your
1 2
shoes on the couch) (because I saved for a long
3
time to buy it and I want it to look nice.")

In which of the following messages does the speaker own her/his feelings?

_____1. "What's the matter? Can't you see I'm busy?"

_____2. "I feel irritated when you interrupt me while I'm typing, because I lose my place so easily."

_____3. "I really feel happy that you got your scholarship. I know how hard you worked for it."

_____4. "That's terrific! You're really a smart person."

_____5. "I really feel upset when you talk about Allie that way, because she's my very best friend, and I think she's a neat person."

_____6. "You're always putting people down. Don't you ever have anything nice to say about anyone?"

_____7. "I feel that you must really be a selfish person to forget about my birthday."

_____8. "I feel disappointed that you didn't remember my birthday. I was looking forward to a phone call from you."

Answers: 2, 3, 5, and 8

INFORMATION SHEET

Notice in these messages that the ones where the speaker doesn't own her/his feelings sound like either judgements or accusations. In either case the other person is more likely to become defensive than if the speaker owns her/his feelings with an "I" message. Even the positive response in Number 4 could stimulate a defensive reaction. The other person might think, "Who are you to judge how smart I am!" Or she/he may get the idea that you think you are smarter than she/he.

Statement 7 shows a common error we can make in trying to own our feelings. We start out with the words "I feel" but end up with the accusation "you are." Remember that when we own our feelings we limit our statement to stating our own feelings, describing the other person's action, and explaining why we feel the way we do.

There are some other errors we tend to make when we try to send "I" messages. For example, we can make a message that is so long it sounds preachy. Or we can misstate the intensity of our feelings, as in the statement, "I feel thoroughly disgusted when you push those peas on your fork with your little finger." Or we can say, "I feel angry...", when actually the anger is a way of covering up our true feelings of hurt or embarrassment or jealousy or frustration. As we practice owning our feelings it is helpful for us to be aware of these errors and to avoid them.

2. Why should we own our feelings

Another person is more likely to accept our feelings if we say they are our feelings than she/he is if we blame or accuse her/him. If the other person accepts our feelings, she/he is more likely to listen to us and to understand us because she/he won't be defending her/himself against our accusations. When another person learns that we are being honest with her/him about our feelings, the person is more likely to be honest with us. The other person learns she/he can trust us. An "I" message leaves the responsibility for changing her/his behavior with the other person. We aren't bossing her/him around or telling the other person what to do. When we own our feelings, the other person learns to be considerate of our needs.

INFORMATION SHEET

On the other hand, when we don't tell the other person how we feel, she/he may not behave in the way we expect simply because she/he is not aware of how her/his behavior is affecting us. Or, the other person may be getting messages from us that she/he cannot clearly interpret. For example, she/he may interpret our silence as boredom, or anger, or agreement. If our words don't say the same thing as our facial expressions and other non-verbal behaviors, the other person may be confused. For example, she/he may ask her/himself, "How can you be angry when you're smiling?" Finally, if we accuse the other person or judge her/him negatively, the person may think we don't like her/him and respond accordingly.

It is often the function of a counselor or social worker to help a person or a family learn to own their feelings. Many helping persons believe that if we try to hide our thoughts and feelings from others, we cannot form truly intimate relationships and we are more likely to have emotional adjustment problems. They believe that a person can be healthier, happier, and more helpful to others if she/he has the courage to be her/his real self with other people.

C. Make plans to be more assertive

To be effective both as health workers and as persons, we need to be able to influence the behavior of other people in a way that lets us achieve our goals while maintaining respect for both ourselves and others.

1. Asserting yourself

Your teacher left the room today for about fifteen minutes. During the time he was gone, a few of the other students started horsing around, and one of them threw another's shoe through the window, breaking the pane of glass. When the teacher returned, he demanded to know who had broken the window. Since no one was willing to rat on the guilty student, the teacher said you would all have to stay after school until the guilty party confessed.

INFORMATION SHEET

You have a music lesson fifteen minutes after the class is over. You pay $7.50 for each lesson, and if you don't cancel the lesson at least 24 hours in advance, you have to pay for a missed lesson. You work hard at a part-time job to pay for your lessons. You feel the teacher is not justified in punishing you for an act you did not commit. You also feel he is unjustified in expecting you to squeal on your classmate.

What should you do?

You could do what Mary did. She packed up her books and stood up and told the teacher he was a real crumb if he expected students to rat on each other. If he had stayed in the classroom, the incident wouldn't have happened. Furthermore, it wasn't her fault if some students were so dumb as to break windows and behave like idiots. She wasn't going to take the punishment for something she didn't do, and she stormed out of the room, slamming the door behind her.

Or, you could respond as David did. He grumbled under his breath about how unfair the teacher was being. He thought of asking to go to the restroom and then sneaking out, but he was afraid of what his parents would do when they found out he had disobeyed. He was equally afraid of what they would do to him if he came home too late. He tried to resign himself to sitting out the punishment and reading his history assignment, but he couldn't concentrate.

Mary's response is an example of aggressive behavior. Her desire to assert herself was carried to an extreme. Her behavior expressed her feelings in the situation, but in the process she put down other people. The other students and the teacher may have felt humiliated and defensive. She achieved her goal--to get to her music lesson--but the aggressive behavior she used to accomplish her goal may have made others dislike her and decide to "get even" later.

INFORMATION SHEET

David's response is an example of non-assertive behavior. When David used non-assertive behavior he inhibited himself in expressing his true feelings and thoughts. In effect he denied the importance of his own feelings by saying to himself, "The teacher is always right, and I am always wrong, even when I'm right." He felt anxious, probably because he wished he had stood up for his own beliefs and feelings. He didn't achieve his goal because he allowed someone else to choose his actions for him. And he didn't feel good about himself.

Karen chose a third way of responding. She approached the teacher at his desk after class. Speaking politely but firmly, she told him she did not break the window and that she could not accept responsibility for the behavior of other students. She explained about her music lesson. The teacher replied that although he did not agree with Karen's philosophy that group members were not responsible for a group's behavior, he did respect Karen's point of view, and he appreciated Karen for telling him how she felt. He understood that it was important for Karen to go to her lesson, and he told her that he would respect her decision if she chose to leave. Karen went to her lesson feeling good about herself and how she handled the situation. The teacher felt good because Karen respected him enough to tell him her feelings.

Karen's response is an example of assertive behavior. She honestly expressed her beliefs and feelings without hurting or putting down the teacher and the other students. She chose for herself how she would act, and she achieved her goal. And she felt good about herself.

This situation is a particularly difficult one because in our culture young people are often discouraged from asserting themselves with adults. Young people are supposed to be obedient. The "good" student is most often

INFORMATION SHEET

the quiet one who doesn't make problems for the teacher. The student who tries to stand up for his/her rights and beliefs is labeled a trouble-maker or "delinquent." One problem, of course, is that non-assertive young people do not automatically become assertive adults. Consequently many adults continue to respond in aggressive or non-assertive ways, not because they want to but because they never learned how to respond assertively.

2. Characteristics of an assertive response

An assertive response has several important characteristics. The words in the response state what you believe or feel, and do not accuse the other person. For example, an assertive response would be "That noise is bothering me. Could you turn the radio down, please?" not, "You are really inconsiderate."

You can show your sincerity and your seriousness by looking directly at the other person when you are talking to her/him. Your facial expression should give the same message as your words. (If you say you are serious and giggle at the same time, it is most likely the other person will believe your giggle and not your words.) Your voice should be firm and modulated, not mousey-soft or bullishly loud. And your timing needs to be right so that the other person can be open to your response. If you make a negative observation about a person in the presence of others, that person will be more concerned about defending her/himself than about listening to what you have to say.

A COMPARISON OF BEHAVIORS*

	NON-ASSERTIVE (Doormat)	AGGRESSIVE (Steamroller)	ASSERTIVE (Leveler)
Definition	Ignores, does not express own rights, needs, opinions. Permits others to infringe on rights.	Expresses own rights at expense of others. Denies others' rights.	Stands up for own rights while also respecting others' rights.
Characteristics of the behavior	Submissive Avoiding Inhibited Placating Pleading Self-denying	Dominating Demanding Blaming Judging Scolding Attacking	Honest Direct Expressive Confident
	Allows others to choose for them.	Chooses for others and they know it.	Chooses for self.
	I'm not OK	You're not OK	I'm OK and you're OK
Body Language	Soft voice Little eye contact	Loud voice Glaring eyes	Firm voice Direct eye contact
Results	Does not achieve goals, gets taken advantage of.	Achieves goals by hurting others, promotes sabotage.	Probably achieves goals, promotes cooperation and problem solving.
Others	Feel superior or guilty.	Feel defensive, demeaned, put down.	Feel respected,know your feelings
Payoff	Avoids risk, conflict, confrontation. May get protection.	Avoids hassles, questions.	Feels better about self, needs probably met, relationships freer and more honest

*Compiled by Melinda M. Howard

INFORMATION SHEET

3. Risks in using assertive behavior

There are some risks involved in assertive behavior. If you decide you would like to behave more assertively you will want to assess these risks before you make any changes. One risk is that you might make a mistake. You might behave aggressively when you think you are being assertive, and get results you did not expect. It is a good idea to make sure you understand the differences between assertive and aggressive behaviors before you try out a new assertive behavior on others.

A second risk of using assertive behaviors is in relationships with people who are close to you. People develop patterns of relating to one another, and any change in those patterns will produce some stress. For example, if you have always been non-assertive or aggressive with your parents, they will probably be confused or upset if all of a sudden you start trying to behave assertively with them. One possible solution would be to do this learning unit with your parents, explaining to them that assertive behavior is a skill you would like to develop and practice in your career development. (Many parents would like to learn to be more assertive in their relationships, too.) What might be some other ways to reduce this kind of risk?

4. Choosing not to assert yourself

Whether you choose to assert yourself in a certain situation will depend on your goals in that situation. Earlier we talked about the risk of changing your relationships when you change your way of behaving with someone else. You will want to carefully evaluate the possible results of asserting yourself before you decide to change your behavior. You may decide that the disadvantages of asserting yourself are greater than the advantages.

INFORMATION SHEET

There may be times when you choose not to be assertive. For example, if the person you are dealing with is having a bad day or is under a lot of pressure, you might choose to show understanding to that person instead of asserting yourself. Or, if you know that a person gets very upset or disagreeable whenever anyone disagrees with her/him, you might decide that being assertive with that person would make more hassle for you than it is worth. In this case your goal might be to not create more problems for yourself, and you would choose to behave non-assertively with this person. Finally, there may be times when you will realize that you are wrong. When you know you are wrong, usually the best thing to do is admit your mistake.

5. Increasing your assertiveness

If you decide you would like to learn to behave more assertively, a problem solving approach is more likely to bring you success. Here are some steps to follow:

a. Observe your own behavior. Are you being assertive or non-assertive or aggressive? Are you satisfied with the effects or consequences of your behavior? One helpful tool is to keep a written record of your responses for several days. Count the number of times you behave assertively, aggressively, or non-assertively. Are you satisfied with your proportion of assertive responses?

b. Choose one situation where you would like to behave more assertively next time that situation occurs. Describe the situation carefully. What did the other person do? What did you say? What were your actions? What were your feelings during and after the situation? Were you looking at the person? Did your facial expression give the same message as your words?

c. Identify your goals in this situation. What do you want the outcome or result to be next time?

INFORMATION SHEET

d. Identify alternative ways you could behave to accomplish your goals. What would be the effects of each way of behaving? If you can think of someone who handles this kind of situation well, describe that person's behavior. Is it assertive behavior? Would this behavior be comfortable and appropriate for you?

e. Try to imagine yourself behaving assertively in the situation. What would you say? How would you say it? Try to find a comfortable, natural way to respond in the situation.

f. Practice the behavior in a role play with someone else. Get their reactions to your behavior. Are you getting the result you want to get? Pay attention to the strong parts of your performance, and not just the weaknesses. You may want to make a video tape or an audio tape so you can observe your own behavior.

g. After you have practiced the assertive behavior until you feel comfortable, test it out in the situation. Pay attention to the consequences of your behavior. What results did it have for you? For the other person? If it didn't have the results you expected, what went wrong? How can you improve your performance?

h. Keep up the practice. At first you may want to choose situations where your success is more likely. After you get better at behaving assertively, you can try your behavior in more difficult situations.

i. Find rewards for yourself for behaving assertively, so you can continue the assertive behavior. Maybe your reward is the good feeling you get from being successful in reaching your goal. Maybe it is the encouragement of your classmates or others when you tell them about your successful behavior. Maybe your reward is in the changed responses of other people to you. The important thing is to find rewards that will encourage you to continue your assertive behavior.

INFORMATION SHEET

D. Be aware of defense mechanisms

Defense mechanisms are useful coping techniques but can be overused and become habit forming causing avoidance of reality.

1. Rationalization - making excuses to avoid threatening situations; offering reasonable but untrue reasons for conduct.
2. Projection - placing blame for one's own inadequacies on someone else or on circumstances.
3. Displacement - the transfer of feelings about one person to someone else.
4. Daydreaming - a mental technique which provides escape.
5. Escape into illness - a means of escape from threatening situations that operates below the level of conscious thought.
6. Repression - the forcing of an unpleasant memory deep into the subconscious mind.
7. Withdrawal - the shutting off of communication or the removal of oneself physically.

E. Basic ways of getting along with people

1. Think before you speak; always say less than you think.

   (NOTE: Cultivate a low, persuasive voice. How one says it often counts far more than what is said.)

2. Make promises sparingly and keep them faithfully, no matter what it costs.
3. Be interested in others, in their pursuits, their welfare, their homes, and families. Let all you meet, however humble, feel that you regard them as persons of importance.
4. Never let an opportunity pass to say a kind and encouraging thing to or about somebody.

INFORMATION SHEET

5. Be cheerful; keep a pleasant smile on your face.

6. Reserve an open mind on all debatable questions. Discuss but do not argue--it is a mark of superior minds to disagree and yet be friendly.

7. Discourage gossip and make a rule to say nothing of another unless it is something good.

8. Be careful of others' feelings. Wit and humor at the other fellow's expense are rarely worth the effort.

F. Human relations with patients

1. Learn to know, understand, and relate to the patient in any situation.

2. Show sympathy for the patient by being eager to serve and by being of gentle touch.

3. Realize and understand sick people are sensitive, both emotionally and physically. Sickness causes strain and patients are not always on their best behavior.

4. Remember to be kind and tolerant when patients are irritable and demanding.

5. Realize much of the satisfaction assistants derive from their work is due to the relation they develop with the patient.

III. Communication Basics

A. Good communication skills are essential to the effective performance of the health care team member. Communication is the process people use to share information with others. For this to occur, all that is necessary is for one person to notice another's behavior and assign meaning to it.

B. Communication behaviors

1. Verbal - in the form of written or spoken words.

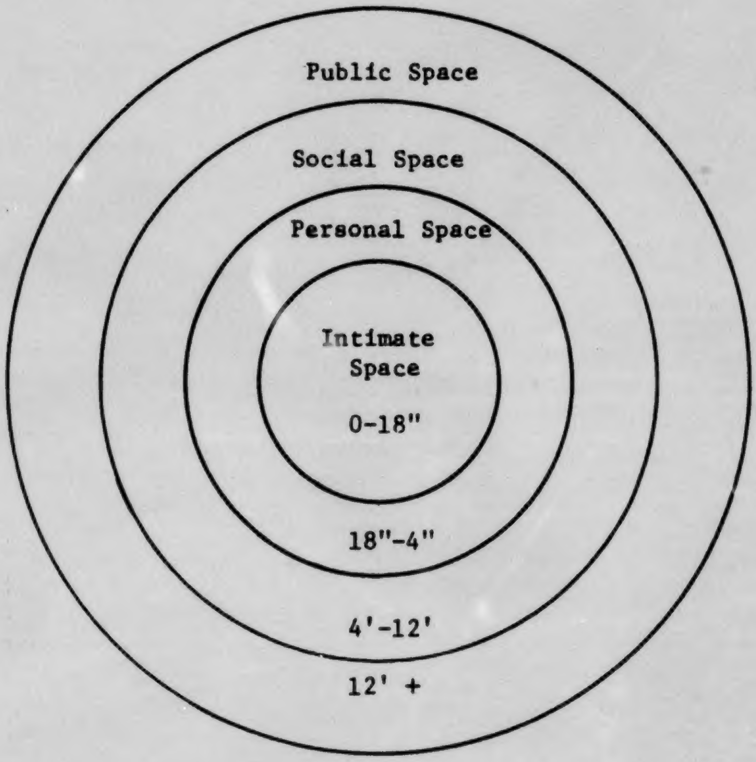
INFORMATION SHEET

2. Non-verbal

   a. Vocal behaviors - pitch of voice, stress or accenting certain words, noises such as "aaah" or clearing our throats.

   b. Body movements - eyes and mouth, hands and arms, body posture.

   c. Space - tells about the intimacy of the conversation. Edward Hall suggests there are four levels or zones of conversational intimacy - intimate, personal, social and public. Intimate space is reserved for lovers and children. If other people enter our intimate spaces, we feel uncomfortable. Personal space can be entered only by friends, family members, while social space is the comfortable distance for talking with acquaintances. Public space is for interacting with strangers.



Levels or Zones of
Conversational Intimacy

INFORMATION SHEET

d. Time - arriving early or late communicates information about relationships.

e. Touch - People have the need to touch and be touched. We use touch to show love, caring, friendship, sportsmanship and anger.

f. Fidgeting - helps us maintain our psychological comfort. It lets others know that we are feeling nervous or uncomfortable. You may be aware or unaware of this behavior.

C. Why do we communicate?

1. We want others to agree with us.
2. We want people to like us or to show that we like them.
3. We want to make ourselves understood and to understand others.

D. Disagreeing versus dislikes

We tend to like other people who have beliefs and ideas similar to our own. Sometimes we dislike people just because they are different from us. So it is not surprising that when somebody disagrees with something we say, we often interpret that they don't like us.

Failing to distinguish disagreement from dislike can create a lot of problems for people working together as a group or team. Why? Because in order for a group to solve a problem or arrive at the best decision, some disagreement is necessary. If members are afraid to disagree because they don't want others to dislike them, the quality of solutions and decisions suffers.

E. Understanding versus agreement

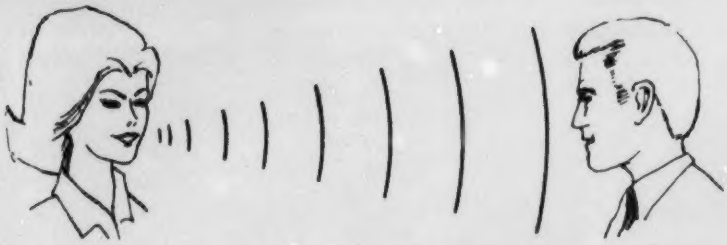
To agree is to believe the same thing as the other person believes. To understand is to be able to summarize what the other person says and feels, regardless of what your own beliefs and feelings are. People who do not distinguish between understanding and agreement generally have a hard time listening to others. Their conversations generally end up in arguments.

INFORMATION SHEET

F. Effective listening

1. Hearing is an unconscious experience which takes place without effort; listening is a conscious mental experience which requires effort.

2. Three basic elements in oral communication



3. Effective communication is a two-way process that involves transmitting ideas from the mind of one person to the mind of another person for the purpose of obtaining a response. Within this process it is the listener's responsibility to endeavor to receive the speaker's intended message and to give evidence through action or words that there has been an understanding of the message. The message is complicated by the fact that the speaker and the listener are both affected by their emotions and a host of feelings about themselves and each other.

4. Six shadings to each message

   a. What the speaker means to say or his/her intended message.

   b. What she/he actually says - the words as she/he presents them.

   c. What you hear - the words.

   d. What you think you hear - his/her message screened through your experiences.

INFORMATION SHEET

e. What you say in reply - your words.

f. What she/he thinks you said - your message screened through her/his experiences and emotions.

5. To receive the message,you as the listener use your eyes, ears, mind and feelings. When any one of these factors dominate the other it affects the message as it is received.

6. Four ways to improve your listening ability - EARS

   a. Listen Earnestly

      1. listen with genuine interest

      2. Show your interest by using good eye-to-eye contact and use a pleasant facial expression.

      3. Don't let his/her appearance or mannerisms dominate your attention.

      4. Don't pretend to listen - give the speaker your full attention.

   b. Listen Actively

      1. Concentrate on the message.

      2. Try to ignore distractions.

      3. Don't participate in mental detours such as mental doodling, idle observation, jumping to conclusions or mental arguments.

      4. Practice listening.

      5. Ask questions and periodically summarize what the speaker is saying. Questions help you to gain information, add understanding and clarify the meaning of the message.

   c. Listen Receptively

      1. Be aware that your emotions can make you deaf.

      2. Listen to opposing views.

      3. Don't let upsetting words make you lose your composure.

INFORMATION SHEET

d. Listen Sensitively

  1. Be aware of the speaker's emotions within the message.

  2. Try to hear what is unsaid that completes the intended message.

7. Roadblocks to helpful listening

  a. Ordering, directing, commanding ("You must ..." "You have to ..." "You will ...")

  b. Warning, admonishing, threatening ("You had better..." "If you don't, then ...")

  c. Moralizing, preaching, obliging ("You should ..." "You ought ..." "It is your duty ..." "It is your responsibility ..." "You are required ...")

  d. Advising, giving suggestions or solutions ("What I would do is ..." "Why don't you ..." "Let me suggest ..." "It would be best for you ...")

  e. Persuading with logic, arguing, instructing, lecturing ("Do you realize ..." "Here is why you are wrong ..." "That is not right ..." "The facts are ..." "Yes, but ...")

  f. Judging, criticizing, disagreeing, blaming ("You are bad." "You are lazy." "You are not thinking straight." "You are acting foolishly." "You're being silly."

  g. Praising, agreeing, evaluating positively, approving ("You're a good boy." "You've done a good job." "That's a nice thing to do.")

  h. Name calling, ridiculing, shaming ("You're a spoiled brat." "Stupid." "Conceited." "Okay, Mr. Smarty.")

  i. Interpreting, analyzing, diagnosing ("What you need is ..." What's wrong with you is ..." You're just trying to get attention ..." "You don't really mean that." "Your problem is ...")

INFORMATION SHEET

j. Reassuring, sympathizing, consoling, supporting ("It's not so bad ..." "Don't worry." "You'll feel better." "That's too bad.")

k. Probing, questioning, interrogating ("Why ..." "Who ..." "Where ..." "What ..." "How ..." "When ...")

l. Withdrawing, distracting, humoring, diverting ("We don't talk about that at the dinner table." "That reminds me ..." "Why don't you burn down the office?" "Get up on the wrong side of the bed?")

G. Active Listening

Active listening is a special kind of listening. In active listening the listener tries to grasp both the facts and the feelings in what she/he hears, and to let the speaker know that she/he understands. The goal in active listening is not to give advice or to judge others. It is to help the speaker work out her/his own problem by listening actively to her/him.

Active listening isn't just some technique you use on people. It requires certain attitudes as well as specific skills. If you are going to be an active listener, you must believe that the speaker is a worthwhile person who has both the right and the responsibility to make her/his own decisions.

You must honestly accept the other person for who she/he is, and not expect her/him to be the kind of person you want her/him to be. You need to feel separate from the other person so you can keep your own feelings from getting too involved in the other person's problem. You must want and be able to take the time to listen and you must care enough about the other person to want to help. You also need good listening skills. Especially important for active listening is the ability to recognize and summarize in your own words the ideas and the feelings expressed by the speaker.

INFORMATION SHEET

Active listening is appropriate when the other person has or owns a problem. You may hear feelings, or the other person may say she/he has a problem, or the other person may be sending messages that are confusing or not easy to understand. These are all cues or signs that active listening is needed.

When you listen actively to another person, you show her/him that you respect her/his thoughts and feelings, and that you believe she/he is a person worth listening to. Active listening makes the other person feel that you are not trying to change her/him. Because she/he does not feel threatened that you will judge and criticize her/him, she/he is more likely to see her/his thoughts and ideas for what they are. She/he can understand her/his problems better and gain confidence in her/his ability to change. Another benefit of active listening is that it influences the other person to be more open and willing to listen to your thoughts and feelings.

Active listening isn't easy. You may feel uncomfortable in helping another person express feelings, especially if these feelings are directed toward you. There is a good chance that your own feelings and emotions, and your own defensiveness about certain things will get in the way of your listening to someone else. Active listening involves a personal risk which you must be willing to take if your goal is to help another person.

In listening actively to another person, we must avoid responses that make her/him think we are judging or criticizing or evaluating her/him and her/his ideas and feelings. This is frequently the result when we give advice. When we give advice, the other person often gets the idea that we don't think she/he is capable of solving her/his own problems. Giving reassuring responses can also make the speaker feel that we are judging her/him. If we say, "Oh, don't worry, I'm sure everything will be all right," it is like telling the person that her/his feelings really aren't justified and that she/he has no right to feel the way she/he does. Finally, pumping a person for more information may also imply that you don't trust the other person to solve the problem for her/himself. In probing for more information you may give the impression that you will be able to solve the problem for her/him once you have all the information.

INFORMATION SHEET

1. Making Active Listening Responses

One of the best ways to show a speaker that you understand what she/he is saying,is to periodically summarize in your own words what you hear the person saying and feeling. For example, you might begin, "So, what you're saying is ..." or "You're feeling irritated because ..." Or you might summarize and then say something like ".... is that what you're saying?" or ".... am I understanding you right?" This kind of statement gives the speaker a chance to say "Yes, that's right," and she/he can continue, reassured that you are understanding her/him. Or the speaker can say "No, that's not what I mean," and try to clarify for you what she/he does mean. Either way, you are letting the speaker know that you are paying attention to what she/he is saying and that you are trying to understand.

Following is a brief example of active listening:

Dave: "Who does Mr. Keane think he is, anyway! I requested those materials six weeks ago, and now he tells me he hasn't sent the order yet."

Mike: "You sound really irritated."

Dave: "You bet I am. I was planning to use those materials in my class next week and now I'll have to figure out what to do instead. As if I didn't have enough to do with teaching six hours every day! You know, sometimes I think he doesn't give a darn about anybody but himself. He's always quick to criticize but when you need his help he's never available."

Mike: "Not having those materials really puts a lot of pressure on you to make other lesson plans, doesn't it?"

Dave: "I'll say. Do you have any ideas on what I might substitute for next week's activities?"

INFORMATION SHEET

Notice that Mike doesn't offer any advice, or get irritated with Dave, or criticize him or tell him he shouldn't get mad. Instead, Mike summarizes in his own words what he "hears" Dave saying and feeling. Dave, assured that Mike understands him, feels free to continue expressing his feelings, and eventually shifts from complaining and showing his irritation to problem solving behavior.

Here's another example of active listening:

Amy: "Boy, if I mess up on this test, it's the end for me."

Jill: "You sound really worried."

Amy: "Yeah. My dad says if I don't get on the honor roll this term, I'll have to drop out of band. One B last term and my dad says I'm neglecting my studies. And I'm NOT. I've gone over this stuff four times and I just can't get it. What am I going to do? The test is tomorrow."

Jill: "You're really feeling a lot of pressure from home."

Amy: "I'll say. I can't even think straight today. My French teacher asked me a question, and I answered in Spanish."

Jill: "Would it be helpful to you if we went over the material together this evening? I mean, I have to study for the test, too, and ..."

Amy: "Oh, would you? I think maybe if I tried working through some problems aloud, maybe you could notice where I'm making the mistakes, and ..."

INFORMATION SHEET

ACTIVE LISTENING RESPONSES

USE OF ACTIVE LISTENING	EXAMPLES OF LISTENER'S RESPONSES
1. To convey interest in what the other person is saying.	I see! Uh-huh!
2. To encourage the individual to expand further on his thinking.	Yes, go on. Tell us more.
3. To help the individual clarify the problem in his own thinking.	Then the problem as you see it ....
4. To get the individual to hear what he has said in the way it sounded to others.	This is your decision then, and the reasons are .... If I understand you correctly, you are saying that we should ....
5. To pull out the key ideas from a long statement or discussion	Your major point is .... You feel that we should ....
6. To respond to a person's feelings more than to his words.	You feel strongly that .... You do not believe that ....
7. To summarize specific points of agreement and disagreement as a basis for further discussion.	We seem to be in agreement on the following points...., but we seem to need further clarification on these points ....
8. To express a consensus of group feeling.	As a result of this discussion, we as a group seem to feel that ...

INFORMATION SHEET

IV. Stress

A. What is stress?

Everyone experiences stress. Stress is a necessary part of our daily lives. Stress is anything that motivates, prods, scares, thrills or threatens us. Stress is the natural reaction of the body to demands placed on it. Stress can be a positive (eustress) or a negative (distress) event. However, some of the same stress responses are caused by both positive (vacation, wellness, exercise, excitement) and negative (illness, deadlines, death of family member, worry) stress.

Stress is constant and occurs even as you sleep. An integral aspect of life is a manageable amount of stress. Prolonged stress can cause fatigue or damage the body or body systems to the point of malfunction or disease. Some symptoms of stress are:

diarrhea, cramps, gas, constipation
blushing when embarrassed
breathing heavily
loss of appetite
sweating palms; cold hands
dizziness
tight feeling in chest

Some stress-induced disorders are:

allergies
anxiety and phobias
asthma
bruxism (teeth grinding)
gastrointestinal disorders
hypertension (high blood pressure)
insomnia
jaw pain
menstrual distress
migraine headache
muscle spasm & pain
Raynauld's syndrome
tension headache
test & performance anxiety

Although stress has been in existence as long as man has been on Earth, it has been a topic for research only in the last four decades. All researchers agree that in a stress experience there is a stimulus which causes a person to make an adaptation response in order to restore equilibrium. Many variables occur within this interaction which determine the nature, duration, intensity and effectiveness of the adaptation response. Researchers believe that this process occurs in positive as well as negative experiences.

INFORMATION SHEET

Hans Selye pioneered research in stress. He describes stress as ".... the nonspecific response of the body to any demand ...." In other words, no matter what the specific stimulus or stressor, a common and nonspecific response occurs.

In 1936 Selye exposed laboratory animals to various stressors over a period of time and observed detrimental effects of arousal. He found varied physical responses to the stressors which led him to view stress as a snydrome (the same complete pattern of physiological processes occur in response to a wide variety of stimuli). This snydrome became known as the three-stage General Adaptation Syndrome. The three stages are: (1) the alarm reaction stage, (2) the stage of resistance, and (3) the stage of exhaustion, described not only as a stress response, but as an adaptation to stress.

Most of the milder stressors which are part of living are quickly dealt with and equilibrium is restored. Adaptation energy is limited, however, and if the body is exposed to a stressor for too long exhaustion will occur. Selye believes that with severe or prolonged stress, irreversible organic changes can occur and the person could become ill or die.

B. Causes of Stress

The major causes of stress can be divided into three general classes: psychosocial causes, physical causes, and personality causes.

Psychosocial causes include:

career challenge
work load
too much responsibility
excessive expectations
boredom
loneliness
the tendency of the body to adjust
    to changes it encounters
inflation
unemployment
time pressures

Physical causes include:

nutrition
noise
physical activity
your relationship to your environment

INFORMATION SHEET

Personality causes include:

self-perception
behavioral patterns
anxiety
time orientation

C. Stress management

It is necessary for each of us to learn how to manage the stresses that we encounter each day if we choose to be healthy, happy people.

We learn to manage stress by keeping physically fit. We need to get enough rest and exercise daily and learn to eat a well-balanced, nutritious diet. Remember to eat more whole-grain breads and cereals, less fat and refined sugar and more fruits and vegetables. Avoid abusing your body with alcohol, smoking or drugs. Remove or limit harmful noise levels from your environment.

We also learn to manage stress by developing coping strategies. Some of these coping strategies are:

- develop positive self-esteem by verbalizing your positive qualities, accepting compliments and becoming more assertive
- utilize time management
- establish routines when possible
- if possible, avoid or minimize other changes during periods of massive change
- set priorities
- avoid over commitments by learning to say no.
- delegate responsibility
- accept fallibility
- enlist the aid and support of others
- plan ahead to avoid potentially stressful situations
- find relaxing activities which are not overly complex or ego involved

INFORMATION SHEET

There are several other ways to modify stressful behavior. Keep in mind that several stress reduction techniques will probably have to be used together to help you reach your level of manageable stress. The following list includes mind-directed techniques which assist in the coping processes by allowing you to find peace within yourself and relax:

- meditation
- biofeedback
- relaxation training

INFORMATION SHEET

V. Reacting to Illness and Death

A. Illness poses a threat to which persons respond with behaviors associated with mourning.

Dr. Kubler-Ross has identified five steps in the grieving process:

1. Denial. The first stage in the grief process involves denial. "No, it can't be true," "I don't believe it," and "No, it can't happen to me," are common first reactions to loss. People who are told that they or a loved one is dying or permanently disabled may show denial by shopping around for a doctor who will tell them it isn't so.

   Denial serves as a buffer or cushion from an unexpected shock. It gives a person time to get her/himself together, and to get other less radical defenses in motion. It is usually a temporary defense, and is soon replaced by partial acceptance of the loss or pending loss.

   All of us have the need for denial at different times in our lives. A good listener will allow a grieving person to use this defense without pointing out the obvious contradictions.

2. Anger. When denial cannot be kept up any longer, it is replaced by feelings of anger. "Why me?" "Why us?" and "What did he do to deserve this?" are common responses. People in this second stage of grieving are hard to be around, because they take out their anger on everyone and everything around. To the patient in this stage of grief, the doctors are no good, family members are thoughtless. The nurses are never around when you need them and always bugging you when you don't. The cooks are lousy, the guy in the next bed makes too much noise, and endlessly on. The people around the grieving person do not think of the reasons for the person's anger, and take the anger personally. As a result, they get angry in return or start avoiding the person. These behaviors on the part of others only add to the grieving person's anger and frustration.

INFORMATION SHEET

A person in the anger stage of grieving needs to know that others understand and respect her/him. When others start paying attention to her/him, and take the time to listen rather than become defensive, the person will soon reduce her/his angry accusations and demands.

3. Bargaining. The third stage of grief, bargaining, is helpful to the grieving person at different times. She/he tries to put off or postpone an impending loss by making a deal for another chance. The deals are often made with God. "If only you'll make my Jimmy walk again, we'll go to church every Sunday," is an example of a bargaining attempt.

   Perhaps people try to bargain because they feel guilty or afraid. At any rate, when a grieving person has the opportunity to talk with someone about the guilt and fears, the bargaining and the unkept promises tend to disappear.

4. Depression. When the grieving person can no longer deny the loss, when the anger and the bargaining have failed, her/his response tends to be depression. Depression shows itself in many different ways. A depressed person may lose interest in what is going on around her/him, or be absent or unproductive at work. Feelings of frustration, anger, and worthlessness may dominate her/his emotions. She/he may weep easily, be artificially cheerful, show more defensiveness than usual, be tired most of the time, or withdraw from others.

   When the loss is past, depression is a reaction to the loss. Others can be helpful by reassuring the grieving person of things that are okay. For example, a man who has had a leg amputated can be reassured that he is still attractive and masculine. A woman hospitalized for an operation can be reassured that her children are getting along fine during her absence.

INFORMATION SHEET

However, when the loss is in the future--as, for example, impending death or a change in job--grieving is preparation for coping with the loss. Reassurance for this kind of depression only makes acceptance of the loss harder to achieve. A person who is sad or depressed about an impending loss should be allowed to express her/his sorrow and to be sad. Often words are not necessary. Just sitting quietly with the person can let her/him know that she/he is okay and that someone cares. It will help her/him reach acceptance of the impending loss. Acceptance will make problem-solving behaviors much easier.

5. Acceptance. The fifth and final stage in the grief process is acceptance of the loss. The anger is gone. The depression is past. The person is ready to accept the loss and go on with the business of living. The person preparing to die is ready to put her/his affairs in order. The person near death begins to separate her/himself from the world around her/him, talking less with those around her/him, and sometimes requesting to be left alone. Others can be most supportive to the dying person at this stage by just being there, holding a hand or giving a special look that says "you're not alone."

   For the person whose impending loss is not her/his own life, others can help her/him prepare for the future in a problem-solving manner. Losses present opportunities for growth and positive change. Dealing effectively with her/his feelings of grief enables a person to lead a rich and fulfilling life.

B. How Illness Affects Children

1. Has to draw on past experiences, which are limited.
2. Will fantasize about things she/he doesn't understand.
3. Will possibly feel that she/he is being punished because of an illness.
4. Will probably be confused about her/his body and its functions.
5. Needs the reassurance of his/her parents.
6. Is normal for a child to behave differently when he/she is ill.

INFORMATION SHEET

C. How illness affects older people

1. Have a vast arrary of experiences which affect behavior.
2. Behavior will be similar to the way they have responded to stress all of their lives.
3. Will have a decreased amount of endurance, stamina, and energy reserve.
4. Recovery will generally take a longer time than recovery time for a younger person.
5. Have a diminished sense of balance.
6. May have a decrease in sense of pain and may not sleep well.
7. Taste, smell and vision decrease.
8. May have poor appetite.
9. Hearing is the last sense to diminish.

D. General categories of physical changes in the dying patient.

1. Loss of muscle tone.
2. Cessation of peristalsis.
3. Slowing of circulation.
4. Labored respirations.
5. Loss of senses.

E. Some considerations of death

1. Defining death.
2. Our own attitudes about death.
3. Funeral customs.

INFORMATION SHEET

4. Ethics - we do have a choice.

5. Spiritual beliefs.

VI. Reality Orientation

A. What is it?

Reality orientation is a method of helping people who are suffering a moderate to severe degree of memory loss, confusion, or time-place disorientation. As such, it is a beginning step in the rehabilitation of persons who are confused and disoriented from their surroundings. Reality orientation is also a tool for preventing disorientation and confusion in patients and residents.

Something is "real" when it has an objective existence outside the mind of a person. And to be "oriented" is to be in the correct position or relationship with the existing situation. Reality orientation helps severely confused people know who and where they are, who the people are around them, and what time of the day, month, and year it is.

The philosophy underlying a reality orientation program is that no resident or patient is hopelessly mentally ill, and that each should make the maximum use of her/his strengths.

B. Who is it for?

Reality orientation is appropriate for persons who are severely or moderately disoriented or confused from any cause. It is useful with patients who have had strokes or head injuries. It is used with patients who have a moderate to severe degree of organic cerebral deficit resulting from arteriosclerosis. It is appropriate for patients who are confused as a result of over-medication or sensory deprivation. It is even used with post-surgery patients as they recover from their anesthesia.

INFORMATION SHEET

C. How does it work?

The key to rehabilitating the confused patient or resident is consistency in the use of reality therapy. Consistency requires that all members of the health team, even relatives and fellow patients, apply the principles of reality therapy in their interaction with a patient.

1. What are these principles:

    a. Speak clearly. Look directly at the patient when you are talking to her/him.

    b. Keep a calm, friendly attitude.

    c. Give instructions one step at a time.

    d. Ask only one question at a time. Keep the questions brief. Allow the patient enough time to respond. Repeat or reword questions when necessary.

    e. Answer patients' questions briefly and clearly.

    f. Do not talk down to patients, or treat them as children. Treat them as dignified adults whom you respect.

    g. Address adult patients as "Mr." or "Mrs." or "Miss" and their last names.

    h. Encourage each patient to take responsibility for her/his own care as much as she/he is able. Encourage her/him to make decisions on her/his own.

    i. Correct a patient tactfully when she rambles in her/his speech or actions. Never humor delusions. If a patient refers to the doctor as "daddy," tell her/him, "He is your doctor, he's not your father."

    j. Be consistent in your responses to patients.

    k. Reward and reinforce a patient's improvements immediately. Tell her/him she/he did something well.

INFORMATION SHEET

The environment for reality therapy is very important. The atmosphere should be calm and friendly. A daily routine should be established and maintained, so that residents know what to expect. The environment should be visually interesting. Different places may be color-coded, and signs can be used to remind easily-confused residents of their location.

In addition to the 24-hour reality orientation that is described above, reality orientation classes are often held daily for patients who are disoriented to the point where they are not sure of their own names, of where they are and why, or of the time. Reality orientation classes use large felt-boards, calendars, clocks and large signs to remind people frequently of the time and place. The instructor, who is frequently a nursing assistant, drills or questions patients on basic information about her/himself and the hospital or nursing home--her/his name, the location of her/his room, the hours meals are served, and so on. The instructor rewards patients for correct responses and corrects their mistakes.

HUMAN RELATIONS
UNIT VIII

ASSIGNMENT SHEET #1 -- LEARNING ABOUT CLASS MEMBERS

DIRECTIONS: This activity will enable you to know the people in your class. You may learn things about them you did not know. You need a partner for this activity. Choose someone you don't know very well. Using this interview data sheet below as a guide, take turns interviewing each other. Write the answers your partner gives to each question. After both data sheets are completed, introduce your partner to the class. Using the notes you wrote during the interview, tell the class about your partner.

INTERVIEW DATA SHEET

Name of Interviewer ________________________________

My name ________________________________

1. What is your classification in school? ________________
2. Describe some of the things you do at work. ____________
   ____
3. Where do you work? ________________________
4. What other schools have you attended? ______________
   ____
5. Do you have any brothers or sisters? ______________
   ____
6. Do they work, and if so, where? ______________
   ____
7. What do you do in your spare time? ______________
   ____

8. What is your favorite course here at school? ____________

____

9. Do you plan to enter the health field after graduation?

What field? ______________________________

10. What is the most important thing that happened to you in the past year? ______________________________

____

____

HUMAN RELATIONS
UNIT VIII

ASSIGNMENT SHEET #2 -- KNOWING MYSELF A PERSONAL INVENTORY

"Who are you?" One way to find out what you know and do not know about yourself is to make a written personal inventory. Study your list. Reflect upon it. Do you know yourself better?

I was born at ...

My favorite color is ...

My favorite food is ...

My favorite smell is ...

My motto is ...

I love to read ...

I enjoy watching ...

I listen to ...

My most memorable memory is ...

My most upsetting memory is ...

My most enjoyable trip ...

My favorite pet is/was ...

My leisure time is spent by ...

If I could live anywhere I pleased, I would be living ...

My dream job would be ...

My home is ...

I wish I were bold enough to ...

Sometimes I wonder if ...

My family is ...

My favorite people are listed here with one word that best describes each of them:

When I grow up ...

I love to ...

I am afraid of ...

I am sorry I never ...

I feel angry when ...

I feel sad when ...

I laugh when ...

In five years I want ...

My favorite things include ...

I wish I knew more about ...

I have never told anyone that ...

One sure way to lift my spirit is ...

I am ...

HUMAN RELATIONS
UNIT VIII

ASSIGNMENT SHEET #3 -- "I" MESSAGES

In each of the following situations, the speaker's response is either a judgement or an accusation. First, figure out how you would probably feel in each situation. Then write a new response to show how you would own your feelings. In other words, write an "I" message.

SITUATION	JUDGEMENT/ACCUSATION	"I" MESSAGE
1. You have a cold. Your friend keeps blowing cigarette smoke in your face.	"Can't you see I have a cold?"	
2. You just spent the whole weekend sewing a new polyester dress. Your friend flicks some cigarette ashes and melts a hole in the front of your dress.	"Look what you just did to my dress! Why can't you be more careful?"	
3. Your parents are divorced and you love them both. You start telling your mother about the nice visit you had with your dad and she starts talking about how irresponsible he is.	"Why do you always have to put Dad down? You're not perfect either, you know."	

SITUATION	JUDGEMENT/ACCUSATION	"I" MESSAGE
4. You lent your favorite book to a friend, and when you got it back the binding was cracked and there was a big coffee stain on the front cover.	"Boy, are you a slob! That's the last time I'll ever lend anything to you."	
5. You are the only person on duty in the medical record department. You are busy with a phone call and several people are waiting to talk to you. Another phone is ringing. An admitting clerk enters the department and bellows, "What's going on here? Why haven't I received that chart?	"Can't you see I'm busy? I'm trying my best, but I'm not superman!"	
6. You have been having difficulty learning a new procedure. Your supervisor criticizes your performance in the presence of your co-workers.	"You have no right to criticize me in front of others like that!"	

HUMAN RELATIONS
UNIT VIII

ASSIGNMENT SHEET #4 -- RATING FEELINGS TO WORDS*

Following are some words we commonly use to express our feelings. Can you add others?

FEELINGS

ELATION		DEPRESSION		ANGER		FEAR	
pleased		disappointed		irritated		anxious	
cheerful		hurt		angry		afraid	
glad		sad		frustrated		terrified	
optimistic		dejected		ticked-off		worried	
happy		guilty		disgusted		upset	
delighted		miserable		fed-up		scared	
amused		worthless		furious		shook	
excited		lonely		hot		threatened	
relieved		empty		annoyed		up-tight	
proud		alone		bugged		nervous	
great		ashamed				unsure	

We use some of these words to describe strong feelings and others for feelings that are not so strong. On the above list, rate each word according to whether it describes an intense feeling (I) or a mild feeling (M).

Compare your ratings with those of your classmates. Do these words mean the same to all of you?

What conclusions, if any, would you draw from your comparison?

____

____

____

*Bob Means, An Aid for Increasing Counselors' Affective Vocabulary (Fayetteville, Arkansas: Arkansas Rehabilitation Research and Training Center, University of Arkansas, April, 1973.)

HUMAN RELATIONS
UNIT VIII

ASSIGNMENT SHEET #5 -- FEELINGS

Our words and the way we say them communicate both our thoughts and our feelings to others. Work together in small groups. Have one of the group read each of the statements with expression. Then pause for a minute to write the possible feelings expressed through the statement. List all the possible feelings you can think of. You may even be able to read the statement different ways to show different feelings.

STATEMENT	WORDS THAT DESCRIBE POSSIBLE FEELINGS
Example: "Go away, will you? Just go away and leave me alone."	sad, angry, hurt
1. "The teacher said I did really well on that last assignment. Do you think he really meant it?"	
2. "I'll never try to help her again!"	
3. "I don't understand. Everytime I ask a question he looks at me like I'm a real dummy."	
4. "I was doing really well for a while, but now I'm doing worse than before. I try really hard, but I can't seem to get it."	
5. "This is the third time my call is being transferred. Doesn't anybody there know what's going on?"	
6. "My dad's going to take me to a Twins game next weekend."	
7. "Boy, I sure made her look silly."	

STATEMENT	WORDS THAT DESCRIBE POSSIBLE FEELINGS
8. "Is this the right way to do it?"	
9. "Thanks a lot. A cigarette burn on this dress is just what I need."	
10. "I got accepted at Mankato State."	

HUMAN RELATIONS
UNIT VIII

ASSIGNMENT SHEET #6 --BUILDING ASSERTIVENESS - YOUR PERSONAL BILL OF RIGHTS

Dare to be assertive by stating your own personal bill of rights. You can assert your rights, but you have no control over whether others will go along with them.

I have the right to: be different; cry; quit something I have started without feeling guilty
(example)

I have the right to:

I have the right to:

I have the right to:

I have the right to:

I have the right to:

I have the right to:

I have the right to:

I have the right to:

HUMAN RELATIONS
UNIT VIII

ASSIGNMENT SHEET #7 --ASSERTIVENESS - LOOKING AT YOUR REAL AND IDEAL SELF

An assertive person takes note of who she/he is before taking steps to change unwated behaviors. Take some time to describe who you are and how you would like to be different. This is an assessment of your real and ideal self. There is space for you to write "shoulds" that seem to be keeping you from being who you want to be.

Real self: I am a person who is:

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

Ideal self: I would like to be more:

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

"SHOULDS": "Shoulds" that prevent me from being my ideal self are:

1.

2.

3.

4.

5.

HUMAN RELATIONS
UNIT VIII

ASSIGNMENT SHEET #8 -- HOW WELL CAN YOU DISTINGUISH ASSERTIVE, NON-ASSERTIVE AND AGGRESSIVE BEHAVIORS?

INSTRUCTIONS: In each of the following situations, decide whether the response is aggressive, non-assertive, or assertive. Write your decision in the blank.

1. Your vocational school advisor tells you that you must take a basic course in medical terminology. You studied some medical terminology in your high school health careers program, and became so interested you completed a programmed course in medical terminology with help from your high school teacher. The course would be repeating what you already know, and a waste of your time and money.

   a. __________You sign up for the course and pay your fees and attend classes because you can't beat the system.

   b. __________You ask your advisor to explain the procedures for exempting or testing out of a course. If your advisor tells you there is no provision for testing out of a course, you talk or write to the administrator, stating your case and requesting that you be permitted to demonstrate your competence on an examination. If the administrator denies your request, you talk with the instructor about the content of the course, and if you feel capable, ask to take the exams without attending the classes.

2. You turn in your first theme in your "Introduction to Nursing" class, and you get a "D" primarily for your poor spelling. You received special help with your spelling all during high school, but never learned to spell well. Now you are afraid that you will fail in college simply because of your poor spelling.

   a. __________You make an appointment to talk to your teacher about your poor spelling and your low grade. You explain that you have never been a good speller, and will probably never be a good speller, but you are confident you would make a good nurse. If your instructor asks what you would suggest she do, you say you would like her to ignore your spelling in assigning a grade.

b. __________You say nothing to your instructor and instead ask your friends to correct your spelling on all your assignments before you hand them in. You resent having to pester your friends, who are already busy with their own assignments.

c. __________You tell your instructor you think she/he is being picky and unfair for grading you on your spelling, and that spelling has nothing to do with being a good nurse.

3. You made a mistake on your clinical training assignment, and your instructor criticizes your performance in the presence of a patient.

a. __________You are embarrassed, and you tell the nurse and the patient how sorry you are for being so dumb.

b. __________You correct your mistake and arrange to talk to the instructor alone. You tell her/him you appreciate her/him correcting your mistakes, but you felt very embarrassed and humiliated in front of the patient. You ask her/him not to critize you in the presence of others.

c. __________You get angry and tell the nurse/instructor she/he has no business criticizing you like that in front of a patient.

4. Someone in your class has been hanging around you dropping not so subtle hints about wanting to go out with you. You are not interested.

a. __________You tell the classmate to stop being such a pest and that you don't like pushy people.

b. __________You try to ignore the classmate and hope that eventually he/she will get the hint.

c. __________You talk to the classmate when others aren't around. You say you have noticed the interest in you, but that you do not want to go out with her/him. You hope she/he isn't too disappointed, but you wanted to be honest and avoid embarrassment in front of others.

5. Your class is having a discussion about death. Some students are talking about how they felt when someone close to them died. Your grandfather died last month. Your teacher asks about your feelings. You do not want to talk about your feelings in the class at this time.

a. __________You say that you would not feel comfortable sharing your feelings with the class at this time.

b. __________You sit and glare at the teacher and you don't say a word. Eventually the silence makes you all uncomfortable and your teacher calls on someone else.

c. __________You make a couple of statements saying what you think the teacher expects you to say. You try hard to keep from crying and you hope the teacher will go on to another student.

HUMAN RELATIONS
UNIT VIII

ASSIGNMENT SHEET #9 --DEFENSE MECHANISMS

Select several situations in which you have used different defense mechanisms. Describe the situation. State the defense mechanism you used and why you used it. Give an alternate way to have handled the situation without having used the defense mechanism.

Situation	Defense Mechanism Used	Why did you use the defense mechanism?	How could you have handled the situation without using the defense mechanism?
1.			
2.			
3.			

HUMAN RELATIONS
UNIT VIII

ASSIGNMENT SHEET #10-- PASS IT ON - A COMMUNICATION GAME

This game demonstrates the weakness of verbal communication. "Pass It On" illustrates how a message may become garbled, emphasis may change and detail may be lost as a message is transmitted from one person to another.

Select-teams of five and explain the game. Person one will be shown a picture (transparency, a slide, a photograph, a drawing or a poster) for thirty seconds and will describe it to Person two. Person two will describe it to Person three. Person three will describe it to Person four. Person four will describe it to Person five. Person five will describe it to the class. Compare the final description with the actual picture. Evaluate and score. See which team has the best score.

VARIATIONS OF THIS GAME

1) Everyone will view picture for thirty seconds and then list the details. Compare with picture and score.

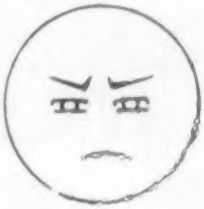
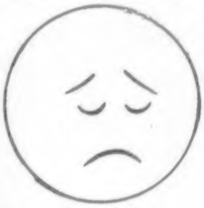
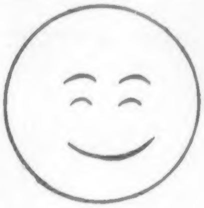
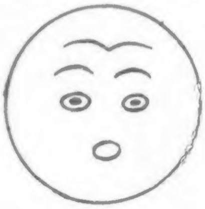
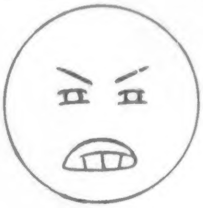
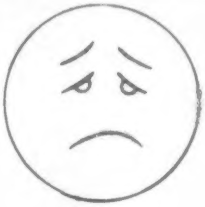
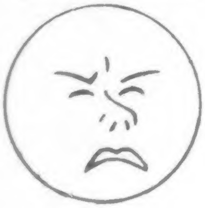
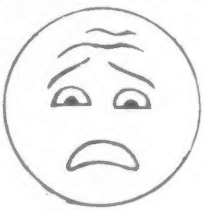
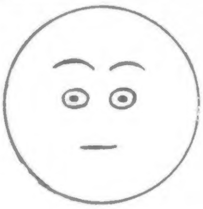
2) Short movie sequences, videotape sequences, or short plays could be used for the "picture".

HUMAN RELATIONS
UNIT VIII

ASSIGNMENT SHEET #11-- NONVERBAL COMMUNICATION: FACIAL CUES*

Match the sketches below with the correct affects.

1) happy
2) sad
3) surprise
4) fear
5) anger
6) disgust

 A.____________	 B.____________	 C.____________
 D.____________	 E.____________	 F.____________
 G.____________	 H.____________	 I.____________

---

*Randall Harrison, Beyond Words: An Introduction to Nonverbal Communication (New Jersey: Prentice-Hall, Inc., 1974), p. 120.

HUMAN RELATIONS
UNIT VIII

ASSIGNMENT SHEET #12-- ACTIVE LISTENING

Which of the following are active listening responses? Which are responses which show judgment?

__________1. That's good you got an "A" on the exam. You're a very bright person.

__________2. So you really feel good about getting that "A".

__________3. Don't worry. I'm sure everything will work out just fine.

__________4. You're feeling apprehensive about what's going to happen, is that it?

__________5. Why don't you explain that more. Why did you decide to do that?

__________6. Maybe what you should do is talk it over with your brother.

__________7. You're happy that Tom is getting married, but at the same time you're sad that you don't have a girl. Is that sort of how you feel?

__________8. I hardly think you have reason to feel so sad about it.

HUMAN RELATIONS
UNIT VIII

ASSIGNMENT SHEET #13-- ACTIVE LISTENING RESPONSES

Respond to the following statements with an active listening response. Remember, your response should 1) summarize in your own words what the speaker is thinking and feeling, and 2) ask for the speaker's confirmation that what you understand is either correct or not correct.

1. "I don't know what we're going to do with your sister Joyce. That girl just won't listen. I mean, who does she think she is anyway, the Queen of Sheba? I'm her father and when I tell her to do something I expect her to do it."

____

____

____

2. "Miss Hargrave said she really liked my report. Do you suppose she really meant it?"

____

____

____

3. "Oh, how I miss Herbert. During the days I keep busy with my housework and other things, but the evenings and the weekends, expecially the weekends, seem so long."

____

____

____

4. "I really didn't mean to break it. I was really being careful, trying to do everything just like he told me. When he finds out, gee, I don't know what he's going to do to me."

____

____

____

5. "It really makes me mad how they make noise until so late at night. But I can't say anything. I mean, after all, they're my friends. Still, somebody should say something."

____

____

____

HUMAN RELATIONS
UNIT VIII

ASSIGNMENT SHEET #14 - IDENTIFY YOUR STRESSORS*

Events and situations that cause stress are called stressors. These events include being sick, going on vacation, tests in school, dating, lack of money, etc. Stress can be pressures from outside - from your home, school or environment. It can also be the pressure you put on yourself.

List your stressors below. Divide the list into three groups: Stressors you cannot change; stressors you can change by yourself; and stressors that involve other people. The key to reducing stressors that involve others is communication. Talking with the person who is involved in the problem may lessen your tension.

---

*Reprinted with permission of Damon Corporation from Stress - Health Maintenance Card, copyright 1980.

HUMAN RELATIONS
UNIT VIII

ASSIGNMENT SHEET #15 - ALTERNATE NOSTRIL BREATHING - A RELAXATION TECHNIQUE

This is an example of a breathing exercise that can help you relax. See if you can appreciate the calm feeling you will experience when you have completed the exercise. Remember to focus on your body's breathing rhythm and recall this technique whenever you feel stressed.

Alternate nostril breathing

Place two fingers in an upright position and gently aim for your nose. First block your right nostril by placing a finger on the outside and pressing gently against the side, now inhale, - hold your breath while you cross over and press gently against the left nostril, now exhale through the right nostril. Hold the exhalation. Now, inhale through the right nostril, cross over and press gently against the right nostril while you exhale through the left nostril. This is one complete cycle. Only do complete cycles, never only ½ cycle of alternate nostril breathing.

Whenever practicing your breathing techniques, it is important to remember to inhale (puraka) with the solar plexus area moving out in a continuous, even process, so that more air is drawn into the lungs. (Solar-plexus-area above the navel and below the ribcage.) Do not bloat the abdomen.

Whenever you exhale (rechaka), give an extra tug to the solar plexus area, you may make a silent ugh sound as extra air is pushed out.

HUMAN RELATIONS
UNIT VIII

ASSIGNMENT SHEET #16-- REACTING TO GRIEF

Imagine yourself in one or more of the situations described below.

1. What would your initial reactions be? What would you probably do? say? feel?

2. What are some feelings you might expect to have in the weeks and months that follow?

3. What can you do to help yourself cope with the loss?

4. What can you do to support others in their grief?

Situation A: At supper your parent or guardian informs you that she/he is being transferred to a job in a city 500 miles away. You will be moving in two months.

Situation B: Your social caseworker informs you that you will be moved to another foster home at the end of the month.

Situation C: Your brother and sister-in-law are separated after seven years of marriage.

Situation D: Your home is destroyed by a tornado while you and your family are visiting relatives in another town.

Situation E: Your right leg is amputated at the knee following a tractor accident.

HUMAN RELATIONS
UNIT VIII

ASSIGNMENT SHEET #17 -- DEFINING DEATH

I would define death as...

____

____

Other definitions of death are... (from such sources as the dictionary, a medical doctor, a medical text.)

____

____

The World Health Organization defines death as the loss of all response to the environment; complete abolition of reflexes and loss of muscle tone; cessation of spontaneous respiration; abrupt fall in the arterial blood pressure and a flat EEG.

Some problems with the medical definition of death are...

____

____

HUMAN RELATIONS
UNIT VIII

ASSIGNMENT SHEET #18 - YOUR ATTITUDES AND VIEWS ON DEATH

The following exercise will help identify the contributions of different sources to your beliefs and attitudes toward death and dying.

DIRECTIONS: Notice that the questions in this inventory are divided into two parts. In PART I select the answer which best represents your own thoughts or feelings and then put the corresponding letter in the space provided. In PART II you have the opportunity to respond to the questions in your own words. Please take your time and answer the questions as thoroughly as possible in the time allotted.

PART I

_____ 1. To what extent do you believe in a life after death?

A. Strongly believe in it.
B. Tend to believe in it.
C. Uncertain.
D. Tend to doubt it.
E. Convinced it does not exist.

_____ 2. To what extent do you believe in reincarnation?

A. Strongly believe in it.
B. Tend to believe in it.
C. Uncertain.
D. Tend to doubt it.
E. Convinced it cannot occur.

_____ 3. How often do you think about your own death?

A. Very frequently (at least once a day).
B. Frequently.
C. Occasionally.
D. Rarely (no more than once a year).
E. Very rarely or never.

_____ 4. What does death mean to you?

A. The end; the final process of life.
B. The beginning of a life after death; a transition, a new beginning.
C. A joining of the spirit with a universal cosmic consciousness.
D. A kind of endless sleep; rest and peace.
E. Termination of this life but with survival of the spirit.
F. Don't know.

____ 5. What aspect of your own death is the most distasteful to you?
A. I could no longer have any experiences.
B. I am afraid of what might happen to my body after death.
C. I am uncertain as to what might happen to me if there is a life after death.
D. It would cause grief to my relatives and friends.
E. All my plans and projects would come to an end.
F. The process of dying might be painful.

____ 6. When you think of your own death (or when circumstances make you realize your own mortality), how do you feel?
A. Fearful.
B. Discouraged.
C. Depressed.
D. Purposeless.
E. Resolved, in relation to life.
F. Pleasure, in being alive.

____ 7. If you had a choice, what kind of death would you prefer?
A. Tragic, violent death.
B. Sudden but not violent death.
C. Quiet, dignified death.
D. Death in a line of duty.
E. Death after a great achievement.
F. Suicide.
G. Homicidal victim.
H. There is no "appropriate" kind of death.

____ 8. What are your thoughts about leaving a will?
A. I have already made one.
B. I have not made a will, but intend to do so some day.
C. I am uncertain or undecided.
D. I probably will not make one.
E. I definitely won't leave a will.

____ 9. To what extent do you believe in life insurance to benefit your survivors?
B. Tend to believe in it; have or plan to get insurance.
C. Undecided.
D. Tend not to believe in it.
E. Definitely do not believe in it.

_____ 10. What are your thoughts about funerals?

A. Feel they are very important for the bereaved.
B. Tend to feel they are valuable.
C. I am uncertain or undecided.
D. Definitely do not believe in them.

PART II

11. Is the attitude of Americans toward death greatly different from the attitudes of Europeans, Africans or Asians?

12. What are the various answers to the question, "What happens to people after death?"

13. What do people do to avoid death?

14. What would you do if you were immune to death?

15. What do the words "living" or "being alive" mean to you?

16. Write down all the words you think of when you hear these words:

LIFE DEATH

17. If you think one way of dying is better than another way please explain why or how.

18. What fears about death or dying do you have?

19. Is death ever a good thing, either for the individual or for society as a whole?

20. What is the purpose behind funerals and burial ceremonies, in the United States and in other lands as well?

21. How would you explain death to a young child (about 5 or 6 years old)?

22. What have you learned about death from the following sources:

    Your Religion

    Your Parents or Other Significant Adults

    Your Teachers

    Your Friends

    The Media

23. What have been other contributions to your knowledge about death?

24. Which of the above sources seems to have had the most influence on your beliefs and values? The least influence?

25. Read "The Living Will". How would you describe the attitude toward death of someone who signed this will?

How does this attitude compare with your own?

Adapted from: "Attitude/Information Inventory," David W. Berg and George G. Daugherty, Perspectives on Death, Waverly Press, Inc., Baltimore, Maryland, 1972.

THE LIVING WILL

"To my family, my physician, my lawyer, my clergyman,

"To any medical facility in whose care I happen to be,

"To any individual who may become responsible for my health, welfare or affairs:

"Death is as much a reality as birth, growth, maturity and old age--it is the one certainty of life. If the time comes when I, ______________, can no longer take part in decisions for my own future, let this statement stand as an expression of my wishes while I am still of sound mind.

"If the situation should arise in which there is no reasonable expectation of my recovery from physical or mental disability, I request that I be allowed to die and not be kept alive by artificial means or 'heroic measures". I do not fear death itself as much as the indignities of deterioration, dependence and hopeless pain. I therefore ask that medication be mercifully administered to me to alleviate suffering even though this may hasten the moment of death.

"This request is made after careful consideration. I hope you who care for me will feel morally bound to follow its responsibility upon you, but it is with the intention of relieving you of such responsibility and of placing it upon myself in accordance with my strong convictions that this statement is made.

"Signed ________________________
"Date ________________________
"Witness ________________________
"Witness ________________________

"Copies of this request have been given to:

____
____
________________________________"
____

---

*You can obtain a copy of the Living Will by writing to The Euthanasia Educational Council, 250 West 57th Street, New York, New York 10019

HUMAN RELATIONS
UNIT VIII

ASSIGNMENT SHEET #19-- RESPONSIVE BEHAVIOR IN A REALITY ORIENTATION PROGRAM

Following are some behaviors shown by health team members. Which behaviors are appropriate in a reality orientation program? Be prepared to justify your choices.

1. The nursing assistant feeds a resident today because yesterday was too much of a hassle getting this resident to feed himself.

2. When this resident starts talking about being at a hotel, the housekeeper reminds her/him that she/he is in the psychiatric section at Memorial Hospital, and that the staff hopes she/he will eventually return to live in her/his community.

3. The occupational therapy assistant speaks v-e-r-y s-l-o-w-l-y and VERY LOUD to Mr. Swenson, because Mr. Swenson is hard of hearing.

4. Mr. Tilson calls the dietitian "mommy." The dietitian winks at him and tells him to be a good little boy and eat all his vegetables.

5. Ms. Lewis is rambling on and on about something that happened to her when she was a child. Her daughter just lets her continue, because her mother is senile anyway and you can't expect much from her.

6. A resident is new and doesn't remember her name. The nursing assistant always addresses the resident by her name, Mrs. Miller.

7. Mr. Coolidge shows up for lunch after the cafeteria is closed. He pleads with the dietary aide to fix a sandwich. The dietary aide tells him that the cafeteria hours are from 11:00 to 1:30 and that he cannot be served after 1:30.

8. Mr. Green goes to lunch in his pajamas and robe. His treatment plan states he should dress in his own clothes everyday. No one mentions anything to Mr. Green about how he is dressed.

9. Mrs. Watson has learned to dress and feed herself. When she returns to her home, Mr. Watson helps her dress to show his love for her.

10. Mr. Lewis asks you whether he should wear his green tie or his brown tie. You encourage him to make the choice himself.

HUMAN RELATIONS
UNIT VIII

ASSIGNMENT SHEET #20 - BECOMING A MEMBER OF A REALITY ORIENTATION TEAM

The following discussion questions will help you identify some of the skills, attitudes, and areas of knowledge you need in order to be an effective member of a reality orientation team.

1a. Imagine that you have just been hired as a nursing assistant in a nursing home which uses reality orientation methods with some of the residents. List some areas of knowledge and skill you will need to be an effective member of the treatment team.

b. What additional knowledge do you think the physician must have in order to prescribe a treatment plan involving reality orientation?

2. A health worker who is part of a reality orientation treatment team is required to control her/his behaviors so they are consistent with treatment philosophy and goals. This self-control is not easy to achieve. Often it means doing something or treating a person in a way that is contrary to our usual way of being with others. The effective health worker is able to focus her/his concern on the treatment goals of the patient. She/he is willing to tolerate personal discomfort in order to behave in a way that is most helpful to a patient in reaching her/his treatment goals.

How effectively are you able to control your own behavior at the present time?

a. Describe a situation where your behavior with another person had the results you wanted. Did you choose that behavior or did it "just happen"? Describe another behavior you could have used in this situation. What might have been the results of this alternative behavior?

b. On the following scale, rate yourself according to the amount of control you currently exercise over your behavior. Mark that spot with a "C" (current). Then determine the amount of control you would like to be able to exercise over your behavior in the future (when you begin working, for example). Mark that spot with an "F" (future).

____

TOTAL CONTROL	MODERATE CONTROL	NOT MUCH CONTROL	NO CONTROL

If you would like to exercise more control over your behavior in the future, what are some things you can do to develop this ability to control your behavior?

____

____

____

3. From the following list of attitudes that different health workers have, choose those which are consistent with a reality orientation treatment approach. Add other attitudes you believe are important to the list. Check your answers with those at the bottom of the next page.

   a. Old people will die soon anyway, so it isn't worth it to spend a lot of time and money helping them to get well.

   b. Old people have worked hard all their lives, so they deserve to just sit around and have others take care of them.

   c. The most important goal in working with a patient or resident is to help her/him develop and maintain independence and self respect.

   d. The most important goal in working with a patient or resident is to take care of the person's physical needs.

   e. All behavior has a cause, even if we don't know what it is.

   f. "Crazy" behavior happens when a person loses her/his mind.

g. "Crazy" behavior can be understood by learning the meaning of that behavior to the person doing it.

h. You shouldn't believe anything a mentally-ill persons says.

Answers: 3. c, e, g

HUMAN RELATIONS
UNIT VIII

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1, #2, #3, #4, #5, #6, #7, #9, #10, #13, #14, #15, #16, #17, #18, #20

Evaluated to the satisfaction of the instructor.

Assignment Sheet #8

1. a. Non-assertive
   b. Assertive
2. a. Assertive
   b. Non-assertive
   c. Aggressive
3. a. Non-assertive
   b. Assertive
   c. Aggressive
4. a. Aggressive
   b. Non-assertive
   c. Assertive
5. a. Assertive
   b. Aggressive
   c. Non-assertive

Assignment Sheet #11

A. 5

B. 2

C. 1

D. 3

E. 5

F. 2

G. 6

H. 4

I. 3

Assignment Sheet #12

2, 4, 7 are active listening responses.

Assignment Sheet #19

2, 6, 7 and 10 are responses consistent with a reality orientation approach.

HUMAN RELATIONS
UNIT VIII

UNIT TEST

1. Discuss the history of human relations in Health Occupations.

    a. The company involved

    b. The purpose of the experiment

    c. The result of the experiment

2. List seven defense mechanisms

3. Name six types of non-verbal communication.

4. List four ways to improve your listening ability.

5. Establish the difference between eustress and distress.

6. List the three general [illegible]es of the major causes of stress.

    a.__________________ b.__________________ c.__________________

7. List the five steps in the grieving process.

   a.

   b.

   c.

   d.

   e.

8. Discuss how illness affects children and older people.

9. Interview class members.

10. Complete personal inventory.

11. Demonstrate how to own your feelings by making "I" statements.

12. Rate feelings to words.

13. Become aware of how feelings are expressed through statements.

14. Compile a personal bill of rights.

15. Assess your real and ideal self.

16. Distinguish assertive, non-assertive and aggressive behavior.

17. Demonstrate an understanding of defense mechanisms.

18. Develop an awareness of the weakness of verbal communication.

19. Distinguish facial cues in non-verbal communication.

20. Recognize roadblocks to helpful listening.

21. Recognize and make active listening responses.

22. Identify your stressors.

23. Demonstrate an understanding of a relaxation technique in stress management.

24. Assess your reactions to grief.

25. Examine definitions of death.

26. Assess your attitudes and views on death.

27. Recognize responsive behavior in a reality orientation program.

28. Identify some of the skills, attitudes and areas of knowledge needed in a reality orientation team.

(NOTE: If activities #9-28 have not been completed prior to the test, ask the instructor when they should be completed.)

HUMAN RELATIONS
UNIT VIII

ANSWERS TO TEST

1. Discussion should include:

   a. The company involved with the human relations experiment was Western Electric Company of Ohio.

   b. The purpose of the experiment was to see if lighting would have an effect on production of parts.

   c. The result of the experiment - The workers increased production during the experiment with and without lighting. The company found out that workers were motivated by special treatment they had received during the experiment. They increased production not because of the lighting but rather because of the special treatment received during the experiment. This created a new concept in the world of work called human relations.

2. a. rationalization

   b. projection

   c. displacement

   d. daydreaming

   e. escape into illness

   f. repression

   g. withdrawal

3. a. vocal behaviors

   b. body movements

   c. space

   d. time

   e, touch

   f. fidgeting

4. a. listen earnestly
   b. listen actively
   c. listen receptively
   d. listen sensitively

5. Eustress is positive stress.
   Distress is negative stress.

6. a. psychosocial
   b. physical
   c. personality

7. a. denial
   b. anger
   c. bargaining
   d. depression
   e. acceptance

8. This should be answered to the satisfaction of the individual instructor.

9-28. Evaluated to the satisfaction of the instructor.

MEDICAL TERMINOLOGY AND ABBREVIATIONS*

UNIT OBJECTIVE

After completing this unit, the student will be able to recognize, define, and use medical terms and abbreviations. The student will also be able to identify medical roots, prefixes, and suffixes. This knowledge will be evidenced through demonstration and by successfully completing a unit test.

SPECIFIC OBJECTIVES

After completing this unit of instruction, the student will be able to:

1. Identify some medical specialties.
2. Recognize commonly used roots, prefixes and suffixes.
3. Identify commonly used medical abbreviations.
4. Reproduce medical symbols.
5. Build names of medical specialties using roots, prefixes and suffixes.
6. Use a medical dictionary.
7. Select specific medical terms from list of definitions.
8. Write medical abbreviations using information sheet.
9. Use local abbreviations.
10. Recognize common medical abbreviations from a list.
11. Identify medical terms and abbreviations from flash cards.

***Reprinted with permission of Occupational Curriculum Laboratory, East Texas State University from Health Occupations Education Units of Instruction Volume I, 1979.**

MEDICAL TERMINOLOGY AND ABBREVIATIONS

SUGGESTED ACTIVITIES

I. Instructor

   A. Provide objective sheet.

   B. Discuss objective sheet.

   C. Pass out information sheet.

   D. Discuss information sheet.

   E. Distribute and discuss assignment sheets.

   F. Distribute and discuss job sheet.

   G. Prepare flash cards of terms and abbreviations for class use by cutting along lines.

   H. Use flash cards to practice student recitation of meanings of terms and abbreviations.

   I. Give test and evaluate results.

II. Student

   A. Read and discuss objective sheet.

   B. Read and discuss material contained in information sheet.

   C. Complete assignment sheet.

   D. Complete job sheet.

   E. Recite meanings of terms and abbreviations on flash cards.

   F. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objective sheet

   B. Information sheet

   C. Assignment sheets

1. Assignment Sheet #1--Building Names of Medical Specialties

2. Assignment Sheet #2--Use of Medical Dictionary

   Note: You may prefer to spend less time on this assignment and choose only those terms you feel are most important to your students. You may wish to add terms.

3. Assignment Sheet #3--Determination of Meanings of Medical Terms

4. Assignment Sheet #4--Selection of Medical Terms

5. Assignment Sheet #5--Identification of Abbreviations

   Note: You may wish to add or delete abbreviations.

6. Assignment Sheet #6--Practice in Writing Abbreviations

7. Assignment Sheet #7--Identification of Local Abbreviations

D. Answers to Assignment Sheets

E. Job Sheet--Recognition of Terms and Abbreviations

F. Answer to Job Sheet

G. Flash Cards of Medical Terms and Medical Abbreviations

H. Test

I. Answers to Test

II. References

A. Frenay, Sister Agnes C. Understanding Medical Terminology. 6th ed. St. Louis: The Catholic Hospital Association, 1977.

B. Hill, E. Joy. Ward Clerk. Division of Vocational Education, University of Kentucky.

C. Lawton, M. Murray and Donald F. Foy. A Textbook for Medical Assistants. 3rd ed. St. Louis: C.V. Mosby Co., 1975.

D. Pima County Community College. Medical Terminology. Tucson: Arizona State Department of Education, 1975.

E. Steen, Edwin. Medical Abbreviations. 3rd ed. Philadelphia: F. A. Davis Co., 1971.

F. Taber, Clarence W. Taber's Cyclopedic Medical Dictionary. 13th ed. Philadelphia: F.A. Davis Co., 1973.

G. Young, Clara G. and James D. Barger. Learning Medical Terminology Step By Step. 3rd ed. St. Louis: C.V. Mosby Co., 1975.

MEDICAL TERMINOLOGY AND ABBREVIATIONS

INFORMATION

Medical terminology is a professional language used by all medical personnel. Medical terms may seem difficult and awkward to beginners but they are used because they are precise. The most common cause of misunderstanding in communication in the medical facility is the inability of some personnel to pronounce, read, and write medical terms. The goal of all health workers is perfection; less endangers the health and lives of patients who trust us to provide medical care.

Medical terms usually consist of two or three parts. The main body of the word--the part that usually gives meaning to the word--is the root. A prefix is a term placed in front of the root to modify the meaning. A suffix is a term placed at the end of the root to modify the meaning.

There are no rigid rules to govern the pronunciation of medical terms, although medical dictionaries give suggested pronunciations. Common usage will vary among professionals in the same hospital.

Medical terms have come to us from every culture and every language, but the majority of terms are derived from Latin and Greek. Thus, we may have different words with the same meaning, but from different languages. For example, the root for skin in Latin is cutis, while in Greek the word is derma. Gata is cat in Latin, while ailuro means cat in Greek.

Some familiar medical terms are used in the titles of medical doctors who are specialists.

The chart on the following page lists some well known medical specialties, titles of specialists, and a description of their work.

MEDICAL SPECIALTIES

Medical Specialty	Specialist	
Cardiology cardi--heart ology--study of	Cardiologist	Diagnosis and treatment of diseases of the heart
Dermatology derma--skin	Dermatologist	Diagnosis and treatment of diseases of the skin
Geriatrics geras--old age iatric--medical treatment	Geriatrician	Medical care of the aged
Gynecology gynoco--woman	Gynecologist	Diagnosis and treatment of diseases of the female reproductive organs
Obstetrics obstetrix--midwife	Obstetrician	The care of women during pregnancy and childbirth
Pediatrics pedia--child iatric--medical treatment	Pediatrician	Diagnosis and treatment of diseases of children

ROOTS, PREFIXES, AND SUFFIXES

The following is a list of common roots, prefixes, and suffixes used in building medical terms. The words used as examples are broken down and the definition of each part of the word is given in an effort to show how terms are actually formed.

Commonly Used Roots

Root	Meaning	Word Example	Meaning of Example
adeno	gland	adenoma adeno gland oma--tumor	tumor of gland
calculus	stone	calculosis calculus--stone osis--condition	presence of a stone
cutis	skin	cutitis cutis--skin itis--inflammation	inflammation of the skin
cyto	cell	cytology cyto--cell ology--study of	study of cells
glyco	sweet	glycosuria glyco--sweet uria--urine	presence of sugar in urine
lingua	tongue	linguiform lingua--tongue form--shape	tongue-shaped
lip	fat	lipoma lip--fat oma--tumor	fatty tumor
lith	stone	lithotomy lith--stone otomy--incision	removal of stone by incision
psora	itch	psoriasis psora--itch iasis--condition	dermatitis, itching skin condition

psycho	mind	psychiatry psycho--mind iatric--medical treatment	branch of medicine which deals with diagnosis and treatment of diseases of the mind
pyo	pus	pyogenic pyo--pus genic--origin	pus producing
radi	ray	radiology radi--ray ology--study of	branch of medicine concerned with use of radioactive substances
tricho	hair	trichoid tricho--hair oid--like	hairlike
viscer	body organs (especially) abdominal	visceromegaly viscero--body organ megaly--enlargement	enlargement of abdominal body organs

Roots Pertaining to the Skeletal System

carpo	wrist	carpectomy carpo--wrist ectomy--excision	excision of the wrist
chondr	cartilage	chondromalacia chrondo--cartilage malacia--softening	softening of cartilage
costa	rib	costalgia costa--rib algia--pain	pain in a rib
cranio	skull	craniotomy cranio--skull otomy--incision	incision through the skull
dactyl	digit (usually a finger)	dactylitis dactyl--finger itis--inflammation	inflammation of finger

ili	ilium (hip girdle)	iliosacral ili--ilium sacral--sacrum	pertaining to region of junction of ilium and sacrum
manus	hand	manicure mani--hand cura--care	care of hands
myel	marrow	myeloma myel--marrow oma--tumor	tumor originating in bone marrow
myo	muscle	myoedema myo--muscle edema--swelling	swelling of a muscle
osteo	bone	osteoplasty osteo--bone plasty--surgical correction	surgical correction or repair of a bone
pedi	foot	pedicure pedi--foot cura--care	care of the feet
spondyl	vertebra	spondylitis spondyl--vertebra itis--inflammation	inflammation of vertebra

Roots Pertaining to Digestive System

chol	bile	cholecystitis chole--bile cysto--bladder itis--inflammation	inflammation of gall bladder
entero	intestine	enteritis entero--intestine itis--inflammation	inflammation of the intestine
gastr	stomach	gastroplasty gastro--stomach plasty--surgical correction	plastic surgery on the stomach

hepat	liver	hepatoma hepat--liver oma--tumor	tumor of the liver
ile	ileum (small intestine)	ileitis ile--ileum itis--inflammation	inflammation of the ileum
laparo	abdomen	laparotomy laparo--abdomen otomy--incision	incision of the abdomen
procto	anus	proctology procto--anus ology--study of	phase of medicine that deals with treatment of diseases of colon, rectum, and anus
pyloro	gatekeeper	pylorotomy pyloro--gatekeeper otomy--incision	incision into the pylorus
stoma	mouth	stomatitis stoma--mouth itis--inflammation	inflammation of the mouth

Roots Pertaining to Circulatory System

angio	vessel	angioma angio--vessel oma--tumor	tumor of a blood vessel
cardi	heart	cardiorrhaphy cardi--heart rhaphy--suture	suture of heart muscle
hem (hemat) (hemo) (hema)	blood	hemolysis hemo--blood lysis--dissolution	dissolving of red blood cells
phleb	vein	phlebotomy phleb--vein otomy--incision	drawing of blood from a vein

thrombo	blood clot	thrombosis thrombo --clot osis--condition	formation of a blood clot
vena	vein	venotomy vena--vein otomy--incision	incision into a vein
cerebro	brain	cerebromalacia cerebro--brain malacia--softening	softening of the brain
encephalo	brain	encephalitis encephalo--brain itis--inflammation	inflammation of the brain
meningo	membrane	meningitis meningo--membrane itis--inflammation	inflammation of the membrane of the brain and spinal cord
neuro	nerve	neurology neuro--nerve ology--study of	branch of medicine dealing with nervous system and its diseases
ophthalm	eye	ophthalmology ophthalm--eye ology--study of	branch of medicine dealing with diagnosis and treatment of eye diseases
oto	ear	otitis oto--ear itis--inflammation	inflammation of the ear
rhin	nose	rhinoplasty rhin--nose plasty--surgical correction of, plastic repair of	plastic surgery of the nose

Roots Pertaining to Urinary System

cysto	bladder	cystitis cyst--bladder itis--inflammation	inflammation of the bladder

nephro	kidney	nephrectomy nephro--kidney ectomy--excision	surgical removal of a kidney
pyelo	pelvis	pyelitis pyelo--pelvis itis--inflammation of	inflammation of the pelvis of the kidney
ren (L.)	kidney	reniform ren--kidney form--shape	kidney-shaped

Roots Pertaining to Respiratory System

pneumon	lung	pneumonectomy pneumon--lung ectomy--excision	surgical removal of a lung
pulmo	lung	pulmonectomy pulmo--lung ectomy--excision	surgical removal of a lung

Roots Pertaining to Reproductive System

cervi	neck	cervicectomy cervi--neck ectomy--excision	surgical removal of uterine cervix
hyster	uterus	hysterectomy hyster--uterus ectomy--excision	surgical removal of uterus
mamma	breast	mammalgia mamma--breast algia--pain	breast pain
mast	breast	mastectomy mast--breast ectomy--excision	surgical removal of breast
metra	uterus	metrectomy metr--uterus ectomy--excision	surgical removal of uterus

oophoro	ovary (egg bearing)	oophoritis oophor--ovary itis--inflammation of	inflammation of the ovary
orchido	testicle	orchidoptosis orchido--testicle ptosis--falling	dropping of testicle
salping	tube	salpingitis salping--tube itis--inflammation of	inflammation of tube

Commonly Used Prefixes

Prefix	Meaning	Word Example	Meaning of Example
ab	away from	abnormal ab--away from norma--rule	away from the rule
a, an	without	apnea a--without pnea--breath	without breath
ambi	both	ambidextrous ambi--both dexter--skillful	uses both hands with equal ease
ante	before, forward	antepartum ante--before partum--labor	before labor begins
anti	against, reversed	antisepsis anti--against sepsis--infection	prevention of growth of bacteria
bi	two, both	bilateral bi--both latus--side	pertaining to two sides of the body
brady	slow	bradycardia brady--slow cardio--heart	slow heart action

circum	around	circumrenal circum--around renal--kidney	around the kidney
co, com, con	together, with	concentric con--together centric--center	having a common center
contra	opposite against	contraception contra--against conception--conceiving	prevention of conceiving
de	down or away from	decaput de--away from caput--head	separation of head from body
dys	bad, difficult, painful	dysentery dys--painful enteron--intestine	inflammation of intestine with pain
ec	out from	ectomy ec--out tomy--excision	excision of any organ or gland
ecto	outside	ectoparasite ecto--outside parasitos--parasite	parasite on outside of body
endo	in, within	endoparasite endo--in, within parasitos--parasite	parasite inside of body
epi	upon, over, in addition to	epidermis epi--over dermis--skin	external layer of skin
ex, exo	out, away from	exit--way out --------- exophthalmia exo--out ophthalmia--eye	the way out abnormal protrusion of eyes
hyper	above, beyond, excessive	hyperacidity hyper--excessive acidus--acid (sour)	excessive acid (in stomach)

hypo	less than, under, below	hypoacidity hypo--under acidus--acid (sour)	lack of acid (in stomach)
inter	between	intercostal inter--between costa--rib	between the ribs
intra	within	intradermal intra--within derma--skin	within the skin
para, par	near, beside, past, abnormal	parathyroid para--beside thyroid--shield (thyroid)	beside thyroid (small endocrine glands located close to thyroid)
peri	around about	pericardium peri--around cardio--heart	membrane around the heart
post	after, behind	postocular post--behind oculus--eye	behind the eye
pre	before, in front of	preoperative pre--before operatus--operation	preceding an operation
pro	before, in front of	prootic pro--in front of oto--ear	in front of the ear
retro	backward, located behind	retroversion retro--backward versio--turning	being turned backward, as the uterus
semi	half	semilunar semi--half luna--moon	half-moon shaped (as semilunar valves of heart)
sub	under, beneath	subdermal sub--beneath derma--skin	beneath the skin

super, supra	above, upper, excessive	suprarenal supra--above rena--kidney	above the kidney
sym, syn	together, with	symbiosis sym--together bios--life	living together
tachy	swift	tachycardia tachy--swift cardia--heart	rapid heart beat
trans	across, beyond, through	transfusion trans--across fusio--pouring	pouring across (transfer of blood from one person to another)
tri	three	tricuspid tri--three cuspis--point	having three points (heart valve)
ultra	beyond, in excess	ultrasonic ultra--beyond sonus--sound	beyond sound (inaudible to human ear)
ur	urine	urology uro--urine ology--study of	study of urine; branch of medicine concerned with diseases of urinary system

Commonly Used Suffixes

Suffix	Meaning	Word Example	Meaning of example
algia	pain	neuralgia neuro--nerve algia--pain	pain along course of a nerve
desis	binding fixation of	arthrodesis arthro--joint desis--fixation	surgical fixation of a joint
ectasis	expansion dilation	bronchiectasis bronchi ectasis--dilation	dilation of bronchi

ectomy	excision	appendectomy appendix ectomy--excision	surgical removal of appendix
form	having shape of	linguaform lingua--tongue form--shape	tongue-shaped
iasis	condition formation of, presence of	lithiasis lithos--stone iasis--formation	formation of stone
itis	inflammation	otitis oto--ear itis--inflammation	inflammation of the ear
malacia	softening	osteomalacia osteo--bone malacia--softening	softening of a bone
megaly	enlargement	enteromegaly enteron--intestine megaly--enlargement	abnormal enlargement of the intestine
oid	resemblance like	trichoid tricho--hair oid--like	hairlike
ology	study of	cardiology cardio--heart ology--study of	diagnosis and treatment of diseases of the heart
oma	tumor	lipoma lip--fat oma--tumor	fatty tumor
otomy	incision	osteotomy osteo--bone otomy--incision	cutting through a bone
osis	condition, status, or process	dermatosis derma--skin osis--condition of	disease condition of the skin

path patho pathy	disease	otopathy oto--ear path--disease	disease of the ear
pexy	fixation suspension	mastopexy masto--breast pexy--fixation	fixation of a breast
phobia	fear of	ailurophobia ailuro --cat phobia--fear of	fear of cats
plasty	surgical correction or plastic repair of	rhinoplasty rhino--nose plasty--plastic repair	plastic surgery of the nose
ptosis	falling	orchidoptosis orchido--testicle ptosis--falling	dropping of testicle
rhaphy	suture	nephrorrpaphy nephron--kidney rhaphy--suture	surgical procedure of suturing the kidney
rhexis	rupture	angiorrhexis angio--vessel rhexis--rupture	rupture of a blood vessel
stomy	more or less permanent opening	colostomy colo--colon stoma--mouth	more or less permanent opening of the colon to the exterior

Prefixes that are Colors

Prefix	Meaning	Word Example	Meaning of example
albus	white	albinuria albus--white uria--urine	"white urine" colorless urine
chloros	green	chloroma chloro--green oma--tumor	"green tumor"

cirrhos	orange yellow	cirrhosis cirrho--orange yellow osis--condition	"yellow condition" liver disease
cyano	blue	cyanosis cyan--blue osis--condition	"blue condition" bluish skin color due to lack of oxygen
erythro	red	erythrocyte erythro--red cytos--cell	red blood cell
leuco	white	leucocyte leuco--white cytos--cell	white blood cell
luteus	yellow	corpus luteum corpus--body luteum--yellow	yellow body of ovary
melano	black	melanouria melano--black uria--urine	dark pigment in urine
polio	gray	poliosis polio--gray osis--condition	gray hair
porphyro	purple	porphyuria porphyro--purple uria--urine	excretion of unusual quantity of porphyrin
rhodo	red (rose)	rhodopsin rhodo--red opsis--vision	visual purple
xantho	yellow	xanthoderma xantho--yellow derm--skin	yellowness of skin

MEDICAL ABBREVIATIONS

Medical abbreviations are actually medical shorthand. The following list of terms is incomplete, but includes abbreviations most frequently used. Each medical facility has terms unique to that institution. The student will need to add these to individual lists.

Abbreviations of Titles of Medical Personnel

D.O.	Doctor of Osteopathy
L.V.N.	Licensed Vocational Nurse sometimes called a Licensed Practical Nurse L.P.N.
M.D.	Medical Doctor
M.T.	Medical Technologist
N.A.	Nurse Aide
P.T.	Physical Therapist
R.I.T.	Registered Inhalation Therapist
R.N.	Registered Nurse

Abbreviations of Areas of the Medical Facility

CCU	cardiac care unit
CS	central supply
EENT	eye, ear, nose and throat
ER	emergency room
ICU	intensive care unit
IT	inhalation therapy
Lab	laboratory
MICU	medical intensive care unit
OB	obstetrics
OR	operating room
PEDI	pediatrics
PT	physical therapy

Abbreviations of Common Laboratory Tests

BUN	blood urea nitrogen
CBC	complete blood count
C and A	Clinitest and Acetest
CSF	cerebrospinal fluid
hb (hgb)	hemoglobin
hct	hematocrit
FBS	fasting blood sugar
NPN	non protein nitrogen
RBC	red blood count
sp gr	specific gravity
ua	urinalysis
WBC	white blood count

General Medical Abbreviations

āā	of each
a.c.	before meals
ad lib	as desired
A.M.	morning
amt	amount
ax	axillary
b.i.d.	twice daily
b.i.n.	twice a night
BM	bowel movement
BP	blood pressure
BRP	bathroom privilege
C.	Celsuis (centigrade)
cal	calorie
cc	cubic centimeter

cm	centimeter
CNS	central nervous system
c.v.	tomorrow night
DPT	diphtheria, pertussis, tetanus
elix	elixir
F	Fahrenheit
gm (Gm)	GRAM
GTT	drop
h	hour
h.n.	tonight
h.s.	at bedtime
kg.	kilogram
L	liter
m	minim
ml	milliliter
mm	millimeter
n.b.	note well
noct	night
NPO	nothing by mouth
O.D.	right eye
OOB	out of bed
O.L.	left eye
O.S.	left eye
O.U.	both eyes
oz.	ounce
P	pulse
p.c.	after meals
P.O.	by mouth
p.r.n.	as needed

q.d. (Q.D.)	every day
q.h. (Q.H.)	every hour
q.2h. (Q.2H.)	every 2 hours
q.i.d.	four times a day
q.o.d.	every other day
QNS	quantity not sufficient
QS (q.s.)	quantity sufficient
R	respiration
R	rectum
R_x	prescription (recipe)
sig	write (let it be labeled)
s.o.s.	if necessary
SSE	soap suds enema
ss	half
STAT	immediately
syr.	syrup
T	temperature
tere bene	rub well
t.i.d.	three times daily
t.i.n.	three times a night
T.O.	telephone order
TPR	vital signs
tr.	tincture
ung.	ointment
ur	urine
V.O.	verbal order
wt	weight

Symbols

Symbols are sometimes used in medical work. The following list includes some of the more commonly used symbols.

$\bar{c}$	with		
$\bar{s}$	without		
>	greater than	♀	female
<	less than	♂	male

MEDICAL TERMINOLOGY AND ABBREVIATIONS

Assignment Sheet #1--Building Names of Medical Specialties

Directions: The following terms are medical specialties. They are divided into root and the suffix "ology". Use the medical dictionary to find the meaning of the root. Then write a description of the specialty. Use the chart in the Information Sheet as a guide.

Medical Specialty	Definitions	Description
1. Neurology		
a. neuro	a. ______________	1. ____________________
b. ology	b. ______________	____________________
2. Otology		
a. oto	a. ______________	2. ____________________
b. ology	b. ______________	____________________
3. Radiology		
a. radi	a. ______________	3. ____________________
b. ology	b. ______________	____________________
4. Gastrology		
a. gastr	a. ______________	4. ____________________
b. ology	b. ______________	____________________
5. Ophthalmology		
a. ophthalm	a. ______________	5. ____________________
b. ology	b. ______________	____________________

UNIT IX

MEDICAL TERMINOLOGY AND ABBREVIATIONS

Assignment Sheet #2--Use of Medical Dictionary

Directions: Use a medical dictionary to find words using the following roots and prefixes. Do not use examples already listed in the lesson. Write the dictionary word, then its definition in the spaces provided.

Root	Word	Dictionary Meaning
adeno		
calculus		
cutis		
cyto		
glyco		
lingua		
lip		
lith		
psora		
psycho		
pyo		
radi		
tricho		
viscer		
carpo		
chondr		
costa		
cranio		
dactyl		
ili		
manus		

[illegible]

myel		
myo		
osteo		
pedi		
spondyl		
chol		
entero		
gastr		
hepat		
ile		
laparo		
procto		
pyloro		
stoma		
angio		
cardi		
hem (hemat)		
phleb		
thrombo		
vena		
cerebro		
encephalo		
meningo		
neuro		
ophthalm		
oto		
rhin		
cervi		

hyster		
mamma		
mast		
metra		
oophoro		
orchido		
salping		
cysto		
nephro		
pyelo		
ren		
pneumon		
pulmo		

Prefix	Word	Dictionary Meaning
ab		
a, an		
ambi		
ante		
anti		
by		
brady		
circum		
co,com,con		
contra		
de		
dys		
ec		
ecto		
epi		

ex, exo		
hyper		
hypo		
inter		
intra		
para, par		
peri		
post		
pre		
pro		
retro		
semi		
sub		
super (supra)		
sym (syn)		
tachy		
trans		
tri		
ultra		
uro		

Prefixes That Are Colors

albus		
chloros		
cirrhos		
cyano		
erthryro		
leuco (k)		
luteus		

melano ______________ ______________

polio ______________ ______________

porphyro ______________ ______________

rhodo ______________ ______________

xantho ______________ ______________

MEDICAL TERMINOLOGY AND ABBREVIATIONS

Assignment Sheet #3--Determination of Meanings of Medical Terms

Directions: Separate the following terms into their root and prefix (or suffix). Write the word parts and the meaning of each part in the blank spaces provided. Use the information sheet as a reference.

Word	Root	Meaning	Prefix (Suffix)	Meaning	
Ex. Adenomalacia	adeno	gland	malacia	softening	
1. psychopath					1.
2. cyanosis					2.
3. hepatitis					3.
4. hypergastric					4.
5. cardiotomy					5.
6. nephroma					6.
7. erythrocyte					7.
8. hypodermic					8.
9. orchidopexy					9.
10. lithiasis					10.

UNIT IX

MEDICAL TERMINOLOGY AND ABBREVIATIONS

Assignment Sheet #4--Selection of Medical Terms

Directions: Select the correct meaning from the four choices listed for each of the following prefixes, suffixes, or root words. Place letter answers in blank spaces provided.

1. cutis means: _____ 1.

    a. hand
    b. skin
    c. inflammation
    d. tumor

2. pyo means: _____ 2.

    a. pus
    b. condition
    c. fat
    d. cell

3. tricho means: _____ 3.

    a. finger
    b. cartilage
    c. skull
    d. hair

4. spondyl means: _____ 4.

    a. bone
    b. foot
    c. muscle
    d. vertebra

5. entero means: _____ 5.

    a. intestine
    b. liver
    c. vessel
    d. gatekeeper

6. phleb means: _____ 6.

    a. vein
    b. vessel
    c. heart
    d. mouth

7. angio means: _____ 7.

a. vessel
b. tumor
c. condition
d. blood

8. neuro means: _____ 8.

a. membrane
b. nose
c. nerve
d. brain

9. cysto means: _____ 9.

a. kidney
b. stone
c. lung
d. bladder

10. pulmo means: _____ 10.

a. lung
b. kidney
c. hand
d. brain

11. ren means: _____ 11.

a. lung
b. kidney
c. hand
d. skull

12. hyster means: _____ 12.

a. testicle
b. uterus
c. tub
d. neck

13. anti means: _____ 13.

a. against
b. before
c. slow
d. together

14. contra means: _____ 14.

a. out
b. under
c. against
d. with

15. hyper means: _____15.

a. above
b. below
c. out
d. down

16. epi means: _____16.

a. out
b. hand
c. eye
d. over

17. pre means: _____17.

a. before
b. after
c. backward
d. painful

18. sub means: _____18.

a. above
b. beyond
c. eye
d. under

19. ectomy means: _____19.

a. condition
b. excision
c. inflammation
d. binding

20. itis means: _____20.

a. inflammation
b. skull
c. dilation
d. against

21. algia means: _____21.

a. dilation
b. inflammation
c. pain
d. difficult

22. ology means: _____22.

a. disease
b. pain
c. skin
d. study of

23. path means: ______23.

a. incision
b. disease
c. study of
d. ear

24. albus means: ______24.

a. white
b. green
c. pus
d. large

25. cyano means: ______25.

a. yellow
b. blue
c. wolf
d. breath

UNIT IX

MEDICAL TERMINOLOGY AND ABBREVIATIONS

Assignment Sheet #5--Identification of Abbreviations

Directions: Write the correct meaning for the abbreviations listed below using the information sheet.

DO ____________________

MD ____________________

L.V.N. ____________________

P.T. ____________________

R.N. ____________________

CCU ____________________

ER ____________________

OR ____________________

PT ____________________

CBC ____________________

Hb ____________________

RBC ____________________

WBC ____________________

Ua ____________________

a.c. ____________________

ad lib ____________________

b.i.d. ____________________

BRP ____________________

C ____________________

m ____________________

mm ____________________

n.b. ____________________

O.D. ____________________

p.c. ____________________

p.r.n. ____________________

q.h. ____________________

q.i.d. ____________________

CNS ____________________

F ____________________

gtt ____________________

QS ____________________

s.o.s. ____________________

ss ____________________

STAT ____________________

t.i.d. ____________________

TPR ____________________

ur ____________________

V.O. ____________________

MEDICAL TERMINOLOGY AND ABBREVIATIONS

Assignment Sheet #6--Practice in Writing Abbreviations

Directions: Write the correct abbreviations for the following words or phrases.

1. registered nurse ________
2. nurse aide ________
3. central supply ________
4. intensive care unit ________
5. inhalation therapy ________
6. obstetrics ________
7. Clinitest and Acetest ________
8. cerebrospinal fluid ________
9. hematocrit ________
10. specific gravity ________
11. urinanalysis ________
12. fasting blood sugar ________
13. of each ________
14. morning ________
15. amount ________
16. axillary ________
17. twice a night ________
18. bowel movement ________
19. blood pressure ________
20. cubic centimeter ________
21. milliliter ________
22. night ________
23. nothing by mouth ________
24. out of bed ________
25. left eye ________
26. ounce ________
27. every day ________
28. every 2 hours ________
29. every other day ________
30. quantity not sufficient ________
31. rectum ________
32. write (let it be labeled) ________
33. prescription ________
34. soap suds enema ________
35. syrup ________
36. rub well ________
37. telephone order ________
38. tincture ________
39. ointment ________
40. weight ________

MEDICAL TERMINOLOGY AND ABBREVIATIONS

Assignment Sheet #7--Identification of Local Abbreviations

Directions: Make a list of at least ten abbreviations used in the medical facility where you work that are not listed in the information sheet.

MEDICAL TERMINOLOGY AND ABBREVIATIONS

Assignment Sheet #8--Recognition of Terms and Abbreviations from Flash Cards

Directions: Divide students into groups of six. Designate one student to display the cards; the remaining five students will attempt to give the meaning of the terms as they are displayed. The students should answer in turn.

At intervals the roles of the students should be alternated, i.e., the student that previously displayed cards should join the other five students. One of the original five should now display the cards.

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1--Building Names of Medical Specialties

	Definitions	Description
1.	a. nerve b. study of	The diagnosis and treatment of diseases of the nerves
2.	a. ear b. study of	The diagnosis and treatment of diseases of the ear
3.	a. skin b. study of	The diagnosis and treatment of diseases of the skin
4.	a. stomach b. study of	The diagnosis and treatment of diseases of the stomach
5.	a. eye b. study of	The diagnosis and treatment of diseases of the eye

Assignment Sheet #2--Use of Medical Dictionary

Answers will vary depending on word defined.

Assignment Sheet #3--Determination of Meanings of Medical Terms

	Root	Meaning	Prefix (Suffix)	Meaning
1.	psycho	mind	path	disease
2.	cyan	blue	osis	condition
3.	hepat	liver	itis	inflammation
4.	gastr	stomach	hyper	above
5.	cardi	heart	otomy	incision
6.	nephro	kidney	oma	tumor
7.	erythro	red	cyte	cell
8.	hypo	under	derm	skin
9.	orchido	testicle	pexy	fixation
10.	lith	stone	iasis	formation

Assignment Sheet #4--Selection of Medical Terms

1. b (skin)
2. a (pus)
3. d (hair)
4. d (vertebra)
5. c (intestine)
6. a (vein)
7. a (vessel)
8. c (nerve)
9. d (bladder)
10. a (lung)
11. b (kidney)
12. b (uterus)
13. a (against)
14. c (against)
15. a (above)
16. d (over)
17. a (before)
18. d (under)
19. b (excision)
20. a (inflammation)
21. c (pain)
22. d (study of)
23. b (disease)
24. a (white)
25. b (blue)

Assignment Sheet #5--Identification of Abbreviations

DO	Doctor of Osteopathy
MD	Medical Doctor
L.V.N.	Licensed Vocational Nurse
P.T.	Physical Therapist
R.N.	Registered Nurse
CCU	cardiac care unit
ER	emergency room
OR	operating room
Pedi	pediatrics
CBC	complete blood count
Hb	hemoglobin
RBC	red blood count
WBC	white blood count
Ua	urinanalysis
a.c.	before meals
ad lib	as desired
b.i.d.	twice daily
BRP	bathroom privilege
C	Celsius (Centigrade)
m	minim
mm	millimeter
n.b.	note well
O.D.	right eye
p.c.	before meals
p.r.n.	as needed
q.h.	every hour

q.i.d.	four times a day	ss	half
CNS	Central Nervous System	STAT	immediately
F	Fahrenheit	t.i.d.	three times a day
Gtt	drop	TPR	vital signs
QS	quantity sufficient	ur	urine
s.o.s.	if necessary	V.O.	verbal order

Assignment Sheet #6--Practice in Writing Abbreviations

1. R.N.
2. N.A.
3. C.S.
4. ICU
5. IT
6. OB
7. C and A
8. CSF
9. Hct
10. sp.gr.
11. ua
12. FBS
13. $\overline{aa}$
14. A.M.
15. amt
16. ax
17. b.i.n.
18. BM
19. BP
20. cc
21. ml
22. noct.
23. NPO
24. OOB
25. O.S. (O.L)
26. oz
27. q.d.
28. q.2h.
29. q.o.d.
30. QNS
31. R
32. sig
33. R_x
34. SSE
35. syr
36. tere bene
37. T.O.
38. tr.
39. ung.
40. wt

Assignment Sheet #7--Identification of Local Abbreviations

Answers will vary locally.

Assignment Sheet #8--Recognition of Terms and Abbreviations from Flash Cards

Demonstrated to the satisfaction of the instructor.

UNIT IX

MEDICAL TERMINOLOGY AND ABBREVIATIONS

UNIT TEST

1. Give the description of five of the following medical specialties. (Omit one)

   a. Dermatologist a. ______________________________
   ____

   b. Pediatrician b. ______________________________
   ____

   c. Otologist c. ______________________________
   ____

   d. Ophthalmologist d. ______________________________
   ____

   e. Obstetrician e. ______________________________
   ____

   f. Geriatrician f. ______________________________
   ____

2. Match the listed root words (prefixes or suffixes) with their meaning using letter answers.

1. hair	a. algia	_____	1.
2. skin	b. angio	_____	2.
3. nerve	c. cutis	_____	3.
4. vessel	d. cyano	_____	4.
5. above	e. entero	_____	5.
6. blue	f. hyper	_____	6.
7. inflammation	g. hyster	_____	7.
8. lung	h. itis	_____	8.
9. pain	i. neuro	_____	9.
10. uterus	j. pulmo	_____	10.
	k. tricho		

3. Listed are root words. Under each root are four meanings. Choose the correct meaning and write the answer in the blank space at the right.

Example:

a. adeno means:

gland, skin, sweet, pus ___gland___ a.

b. cyto means:

sweet, mind, cell, fat ______________ b.

c. glyco means:

skin, stone, cell, sweet ______________ c.

d. lith means:

stone, tongue, gland, itch ______________ d.

e. psycho means:

mind, tongue, fat, ray ______________ e.

f. chondr means:

hair, cartilage, body organs, pus ______________ f.

g. crani means:

mind, ray, wrist, skull ______________ g.

h. dactyl means:

rib, ray, digit, wrist ______________ h.

i. osteo means:

hand, rib, wrist, bone ______________ i.

j. myo means:

muscle, hand, hip, marrow ______________ j.

k. chol means:

stomach, bile, ilium, foot ______________ k.

l. hepat means:

stomach, bile, liver, intestine ______________ l.

m. pyloro means:

gatekeeper, liver, ileum, abdomen ________________ m.

n. stoma means:

stomach, intestine, mouth, anus ________________ n.

o. cardi means:

heart, vessel, abdomen, intestine ________________ o.

p. hem means:

heart, vessel, vein, blood ________________ p.

q. vena means:

vessel, vein, blood, liver ________________ q.

r. thrombo means:

clot, vein, blood, vessel ________________ r.

s. encephalo means:

nerve, vein, brain, ear ________________ s.

t. neuro means:

nerve, vein, ear, eye ________________ t.

u. rhin means:

ear, eye, nose, brain ________________ u.

v. meningo means:

membrane, nose, brain, pelvis ________________ v.

w. nephro means:

kidney, lung, bladder, ear ________________ w.

x. pyelo means:

kidney, bladder, lung, pelvis ________________ x.

y. pneumon means:

lung, kidney, bladder, eye ________________ y.

z. hyster means:

bladder, neck, pylorus, uterus ________________ z.

aa. mast means:

breast, uterus, neck, ovary ______________ aa.

bb. salping means:

breast, uterus, tube, ovary ______________ bb.

cc. orchido means:

tube, testicle, neck, rib ______________ cc.

dd. chloros means:

green, bile, liver, stone ______________ dd.

ee. erythro means:

blood, vein, red, white ______________ ee.

4. Listed below are some prefixes and suffixes. Under each term are four meanings. Choose the correct meaning and write the answer in the blank space at the right.

a. ab means:

away from, toward, both, two __________ a.

b. ambi means:

away from, toward, both, against __________ b.

c. brady means:

against, before, slow, both __________ c.

d. circum means:

around, slow, both, away from __________ d.

e. contra means:

around, upon, down, against __________ e.

f. epi means:

upon or over, away from, in, out __________ f.

g. hypo means:

less than or below, away from, in,
out from __________ g.

h. ecto means:

down, over, in, outside __________ h.

i. dys means:

out from, in, above, bad or painful __________ i.

j. inter means:

out, less than, between, within __________ j.

k. post means:

after, near, within, before __________ k.

l. pre means:

after, before, within, between __________ l.

m. retro means:

before, backward, around, within __________ m.

n. semi means:

under, half, swift, across __________ n.

o. sub means:

under or beneath, half, across, together __________ o.

p. ectomy means:

expansion or dilation, inflammation, excision, pain __________ p.

q. algia means:

binding, inflammation, excision, pain __________ q.

r. iasis means:

inflammation, binding, condition, pain __________ r.

s. itis means:

inflammation, excision, pain, condition __________ s.

t. malacia means:

inflammation, excision, having shape, softening __________ t.

u. megaly means:

resemblance, enlargement, incision, study of __________ u.

v. path means:

incision, tumor, study of, disease __________ v.

w. oma means:

tumor, having shape, resemblance, disease __________ w.

x. phobia means:

falling, rupture, resemblance, fear of __________ x.

y. rhexis means:

rupture, falling, fear of, tumor __________ y.

5. A. Give the meaning of the following abbreviations of titles of medical personnel.

1. L.V.N. ______________________________ 1.

2. N.A. ______________________________ 2.

3. R.N. ______________________________ 3.

4. M.D. ______________________________ 4.

B. Give the meanings of the following abbreviations of the medical facility.

1. CCU ______________________________ 1.

2. ICU ______________________________ 2.

3. OB ______________________________ 3.

4. ER ______________________________ 4.

5. PT ______________________________ 5.

6. CS ______________________________ 6.

C. Give the meanings of the following abbreviations of laboratory tests.

1. BUN ______________________________ 1.

2. CBC ______________________________ 2.

3. CSF ______________________________ 3.

4. RBC ______________________________ 4.

5. ua ______________________________ 5.

D. Give the abbreviations for the following medical terms.

1. before meals __________ 1.
2. as desired __________ 2.
3. twice a day __________ 3.
4. bowel movement __________ 4.
5. morning __________ 5.
6. blood pressure __________ 6.
7. Celsius __________ 7.
8. centimeter __________ 8.
9. diphtheria, pertussis, tetanus __________ 9.
10. Fahrenheit __________ 10.
11. drop __________ 11.
12. hour __________ 12.
13. at bedtime __________ 13.
14. kilogram __________ 14.
15. milliliter __________ 15.
16. nothing by mouth __________ 16.
17. as needed __________ 17.
18. pulse __________ 18.
19. out of bed __________ 19.
20. after meals __________ 20.
21. every day __________ 21.
22. every 2 hours __________ 22.
23. respiration __________ 23.
24. immediately __________ 24.
25. soap suds enema __________ 25.
26. prescription __________ 26.
27. three times a day __________ 27.

IX-50 28. telephone order ____________28.

29. temperature ____________29.

30. verbal order ____________30.

6. Give the meaning for the following symbols:

a. c̄ ______________________ a.

b. s̄ ______________________ b.

c. > ______________________ c.

d. < ______________________ d.

e. ♀ ______________________ e.

f. ♂ ______________________ f.

MEDICAL TERMINOLOGY AND ABBREVIATIONS

ANSWERS TO UNIT TEST

Any five of the six.

1. a. diagnosis and treatment of diseases of the skin
    b. diagnosis and treatment of diseases of children
    c. diagnosis and treatment of diseases of the ear
    d. diagnosis and treatment of diseases of the eye
    e. care of women during pregnancy and childbirth
    f. medical care of the aged

2. 1. k
    2. c
    3. i
    4. b
    5. f
    6. d
    7. h
    8. j
    9. a
    10. g

3. a. gland
    b. cell
    c. sweet
    d. stone
    e. mind
    f. cartilage
    g. skull
    h. digit
    i. bone
    j. muscle
    k. bile
    l. liver
    m. gatekeeper
    n. mouth
    o. heart
    p. blood
    q. vein
    r. clot
    s. brain
    t. nerve
    u. nose
    v. membrane

w. kidney

x. pelvis

y. lung

z. uterus

aa. breast

bb. tube

cc. testicle

dd. green

ee. red

4. a. away from

b. both

c. slow

d. around

e. against

f. upon or over

g. less than or below

h. outside

i. bad or painful

j. between

k. after

l. before

m. backward

n. half

o. under or beneath

p. excision

q. pain

r. condition

s. inflammation

t. softening

u. enlargement

v. disease

w. tumor

x. fear or

y. rupture

5. A. 1. licensed vocational nurse

2. nurse aide

3. registered nurse

4. medical doctor

B. 1. Cardiac Care Unit

2. Intensive Care Unit

3. Obstetrics

4. Emergency Room

5. Physical Therapy

6. Central Supply

C. 1. blood urea nitrogen
   2. complete blood count
   3. cerebrospinal fluid
   4. red blood count
   5. urinalysis

D. 1. a.c.
   2. ad lib
   3. b.i.d.
   4. BM
   5. A.M.
   6. BP
   7. C
   8. cm
   9. DPT
   10. F
   11. gtt
   12. h
   13. h.s.
   14. kg
   15. ml
   16. n.p.o.
   17. p.r.n.
   18. P
   19. O.O.B.
   20. p.c.
   21. q.d.
   22. q.2h.
   23. R
   24. STAT
   25. SSE
   26. R_x
   27. t.i.d.
   28. T.O.
   29. T
   30. V.O.

6. a. with
   b. without
   c. greater than
   d. less than
   e. female
   f. male

THE INTEGUMENTARY SYSTEM
UNIT X-A

UNIT OBJECTIVE

After completing this unit, the student will be able to identify disorders of the integumentary system and classify burns. The student will also be able to locate and give the functions of the parts of the integumentary system. This knowledge will be evidenced through application and by satisfactory completion of a unit test.

SPECIFIC OBJECTIVES

After completing this unit, the student will be able to:

1. List components of the integumentary system.
2. Name the functions of the skin.
3. Label a diagram of the skin.
4. Identify the functions of the glands.
5. Identify structure and function of hair and nails.
6. Identify some common disorders of the skin.
7. Define terms related to skin disorders.
8. Name four kinds of burns.
9. Identify four classifications of burns.

THE INTEGUMENTARY SYSTEM
UNIT X-A

SUGGESTED ACTIVITIES

I. Suggested Activities for the Instructor

A. Provide students with objective sheet.

B. Discuss unit and specific objectives.

C. Provide students with information sheet.

D. Discuss information sheet.

E. Make and show transparencies.

F. Provide information for students to use in completing assignment sheets.

G. Distribute handout depicting a cross-section of skin. Have students label the different parts of the skin; lead a class discussion on the functions of the skin.

H. Invite a nurse to speak to the class about the care of the skin and about skin problems and their treatment.

I. Have students examine a piece of skin under a microscope, draw what they see, and label the different parts using correct terminology.

J. Conduct a class experiment by placing equal amounts of water in two beakers. Cover the water in one beaker with olive oil to prevent evaportaion. Place both beakers in a container of boiling water.
Discuss:
In which beaker did the temperature rise most rapidly?
Why?
What conclusion can be drawn from this experiment regarding heat loss and human body temperature?

K. Invite a guest speacker (such as a dermatologist) to discuss special skin care for clients, emphasizing the care of the nails and hair.

L. Lead a class discussion on emergency treatment of burns.

M. Have physical therapist or occupational therapist speak on rehabilitation of the burned patient.

N. Give test

II. Instructional materials:

  A. Objective sheet.

  B. Information sheet

  C. Assignment sheet.

    1. Assignment sheet #1
       Label parts of the skin.

    2. Assignment sheet #2
       Word Find Puzzle

  D. Answers to Assignment Sheets.

  E. Test.

  F. Answers.

III. Unit References

1. Orientation to Health Occupations, Industrial Materials Laboratory, University of Missouri - Columbia.

2. Curriculum Guide for Health Occupations Education, Illinois Office of Education, Department of Adult, Vocational and Technical Education.

3. Memmler, Ruth L. and Dena Lin Wood, Structure and Function of the Human Body. Philadelphia: J. B. Lippincott Co., 1977.

IV. Additional Resources:

1. "Skin Care." Available from Trainex Corporation, P.O. Box 116, Garden Grove, CA 92642.

THE INTEGUMENTARY SYSTEM
UNIT X-A

INFORMATION SHEET

I. Components of the integumentary system.

   A. Skin

   B. Hair

   C. Nails

   D. Oil, wax and sweat glands.

II. Skin

   A. Structure of skin (layers of skin)

      1. epidermis - tough outer covering about 1 mm thick; subdivided into layers and made entirely of epithelial cells with no blood vessels; contains pigment (melanin).

      2. dermis - underlying thicker layer from 0.5 mm to 6mm thick (so-called true skin); has a framework of connective tissue and contains many blood vessels, nerve endings and glands.

      3. Subcutaneous - under-the-skin layer which contains fat deposits used as a reserve energy store.

   B. Appendages of Skin

      1. Sudoriparous glands - secrete sweat

      2. Sebaceous glands - secrete oil

      3. Ceruminous glands - secrete wax

      4. Hair - main function is protection. Hair is a slender filament of (dead epidermal) tissue.

      5. Nails - Main function is protection. Nails are the horny cutaneous plates on the dorsal surfaces of the fingers and toes.

INFORMATION SHEET

C. Function of skin

1. Protection of deeper tissues
2. Environmental adjustment
3. Manufacture Vitamin D
4. Regulate body temperature
    a. Sudorific glands
    b. Blood vessel adjustment
    c. Fat layer

III. Observation of the Skin

A. Color

B. Pigment

1. Melanin content varies with race.
2. Sunlight causes increased pigmentation.
3. Abnormal melanin content or distribution may be a sign of disease.

IV. Specific Skin Disorders

A. Sebaceous gland disorders

1. Sebaceous cyst - a cyst (frequently found on the scalp) filled with sebaceous material (oily, fatty matter) from a distended sebaceous gland.
2. Acne vulgaris - common acne
3. Dandruff - the scaling off of dead tissue of the epidermis of the scalp in the form of dry, white scales which fall.
4. Seborrhea - functional disease of the sebaceous glands marked by increase in the amount and often alteration of the quality of the sebaceious secretion.

INFORMATION SHEET

B. Allergic reactions

1. Urticaria - an inflammatory affection, characterized by the eruption of pale, evanescent wheals, which are associated with severe itching -- hives.

2. Rashes - temporary eruption on skin, with little or no elevation.

C. Infections

1. Ringworm - contagious skin disease due to a species of Trichophyton, a fungous parasite; characterized by red ringed patches of vesicles which cause itching, pain and scaling.

2. Impetigo - inflammatory skin disease marked by isolated pustules (small elevations of skin filled with lymph or pus) which become crusted and rupture; occurs principally around mouth and nostrils.

3. Athlete's foot - infection of skin of foot characterized by cracks, redness, minute vesicles, usually between toes, causing itching and pain.

4. Warts - a horny projection on the skin usually of the extremities that is caused by a virus.

5. Herpes simplex - an acute vesicular eruption of the skin and mucus membrane caused by a virus -- fever blisters or cold sores.

6. Herpes zoster - acute inflammatory disease of the skin; the virus follows the nerve trunks and the location and distribution of the lesions depend on the particular nerves affected -- shingles.

7. Furuncle - a boil

D. Parasites

1. Scabies - a skin disease caused by an animal parasite, the Acarus scabei.

2. Lice - animal parasite infesting hairy parts.

3. Bedbugs - an insect which injects an irritating substance causing a purpuric (a condition of small hemorrhagic spots on the skin and subcutaneous tissues causing the escape of fluids into the skin, mucous membranes and internal organs) reaction.

E. Chronic condition

1. **Eczema** - inflammatory condition, acute or chronic with erythema, papules, vesicles, pustules, scales, crusts or scabs alone or in combination, dry, or with watery discharge, and with thickening or infiltration and more or less itching or burning.

2. **Psoriasis** - inflammatory disease of many varieties characterized by formation of scaly red patches on extensor surfaces of the body.

F. Tumors

1. Nonmalignant (benign) - a swelling or enlargement which is slow growing and does not interfere with the health of the person.

2. Malignant - a swelling or enlargement which grows rapidly and is detrimental to the health and life of the person.

V. Terms Related to Skin Disorders

A. Pruritus - (itching)

B. Dermatitis - (inflammation of the skin)

C. Macule - (a spot on the skin that is not elevated above the surface

D. Papule - (a solid elevated lesion of the skin)

E. Edema - (an abnormal accumulation of fluid in the intercellular spaces of the body)

F. Urticaria - (hives)

G. Furuncle - (a boil)

VI. Burns

A. Kinds

1. Heat

2. Electric

3. Chemical

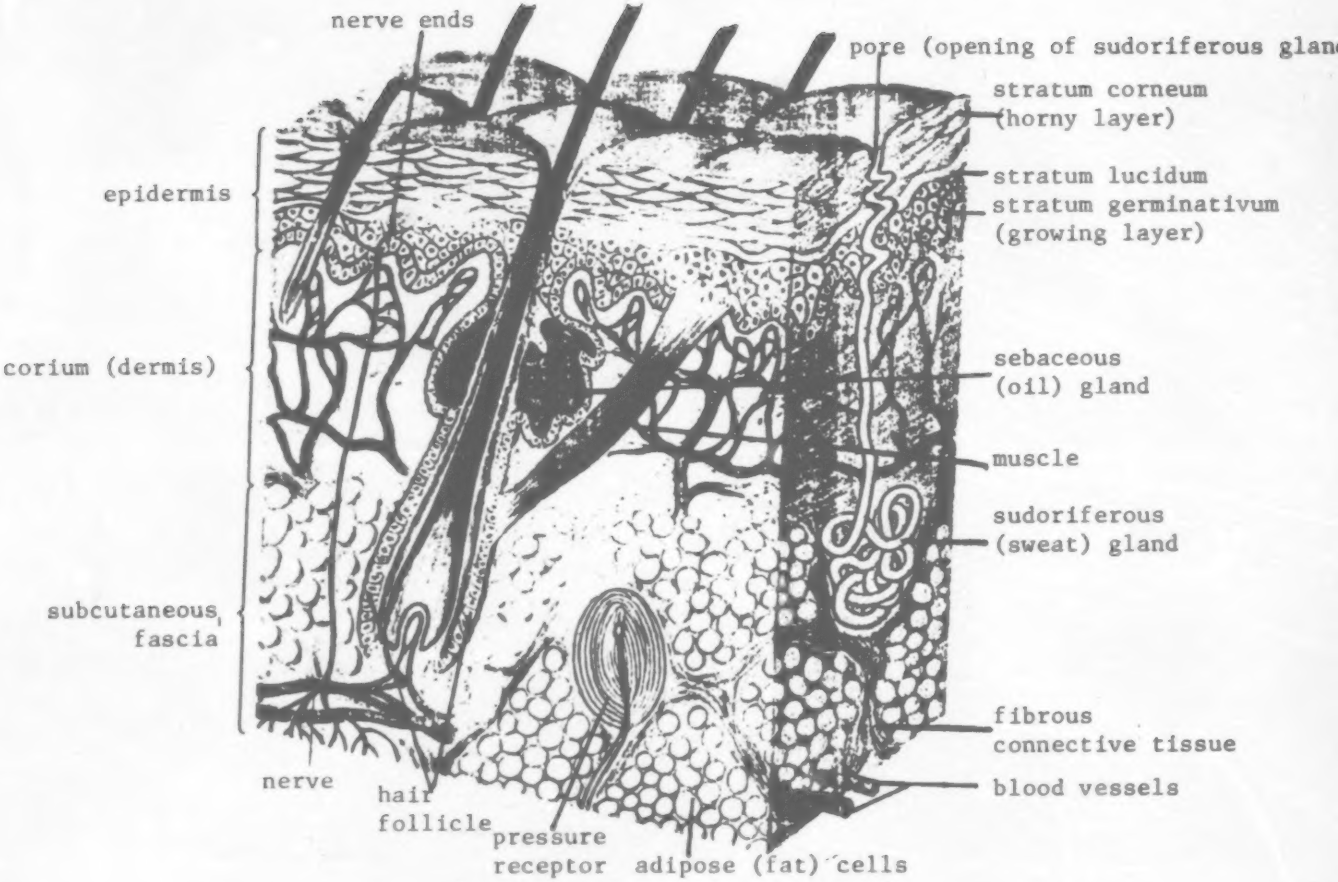
4. Radiant energy

B. Classification

1. 1st degree - the skin is reddened, burn is superficial.

2. 2nd degree - the skin is blistered.

3. 3rd degree - the tissures are charred.

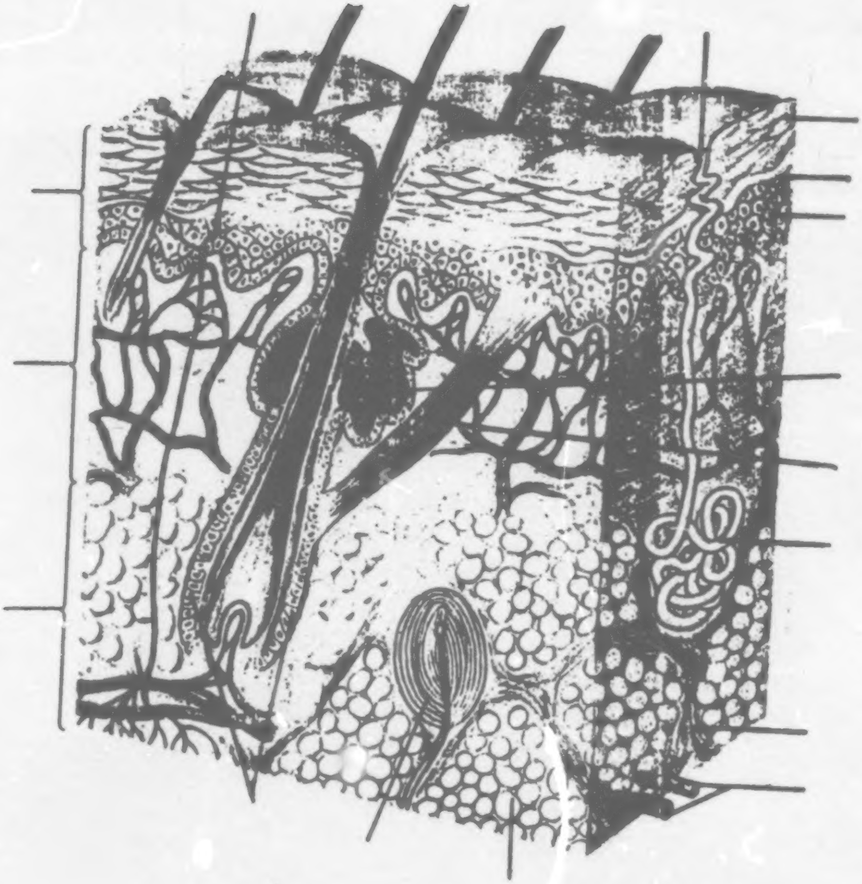

nerve ends
pore (opening of sudoriferous glan
stratum corneum
(horny layer)
stratum lucidum
stratum germinativum
(growing layer)
epidermis
corium (dermis)
sebaceous
(oil) gland
muscle
sudoriferous
(sweat) gland
subcutaneous
fascia
fibrous
connective tissue
blood vessels
nerve
hair
follicle
pressure
receptor
adipose (fat) cells

Cross section of the skin

THE INTEGUMENTARY SYSTEM
UNIT X-A

ASSIGNMENT SHEET #1 - CROSS SECTION OF THE SKIN

Label indicated parts of the skin cross section.



Cross section of the skin

THE INTEGUMENTARY SYSTEM
UNIT X-A

ASSIGNMENT SHEET #2 - WORD FIND PUZZLE

S	I	S	T	M	O	A	B	M	F	U	R	U	N	C	L	E
U	E	E	S	T	R	U	T	F	F	F	D	D	A	T	S	P
D	O	B	R	C	I	N	B	C	U	M	D	T	I	S	B	I
O	W	O	A	L	M	H	P	D	R	S	E	Y	L	C	K	D
R	P	R	S	C	T	J	P	E	D	F	R	P	S	B	G	E
I	S	R	H	D	E	F	C	R	N	H	M	O	R	H	S	R
P	U	H	E	W	D	O	C	M	A	L	A	O	G	A	E	M
A	B	E	S	B	E	F	U	I	D	J	T	F	M	I	B	I
R	W	A	N	E	M	V	S	S	O	E	I	W	A	R	T	S
O	K	T	P	D	A	T	B	M	B	K	T	G	F	J	I	P
U	U	O	B	B	P	L	F	S	V	O	I	E	A	W	V	I
S	U	B	C	U	T	A	N	E	O	U	S	G	I	B	Y	G
Q	B	F	N	G	O	U	R	T	I	C	A	R	I	A	P	M
V	S	B	T	S	M	A	L	I	G	N	A	N	T	C	F	E
H	K	C	E	R	U	M	I	N	O	U	S	J	G	F	S	N
M	E	L	A	N	I	N	A	Q	K	D	A	I	X	V	C	T
P	A	P	U	L	E	H	L	G	P	R	U	R	I	T	U	S

Epidermis
Hair
Sudoriparous
Subcutaneous
Melanin
Seborrhea

Bedbugs
Warts
Dandruff
Edema
Pruritus

Dermis
Sebaceous
Ceruminous
Nails
Pigment
Furuncle

Malignant
Rashes
Dermatitis
Papule
Urticaria

THE INTEGUMENTARY SYSTEM
UNIT X-A

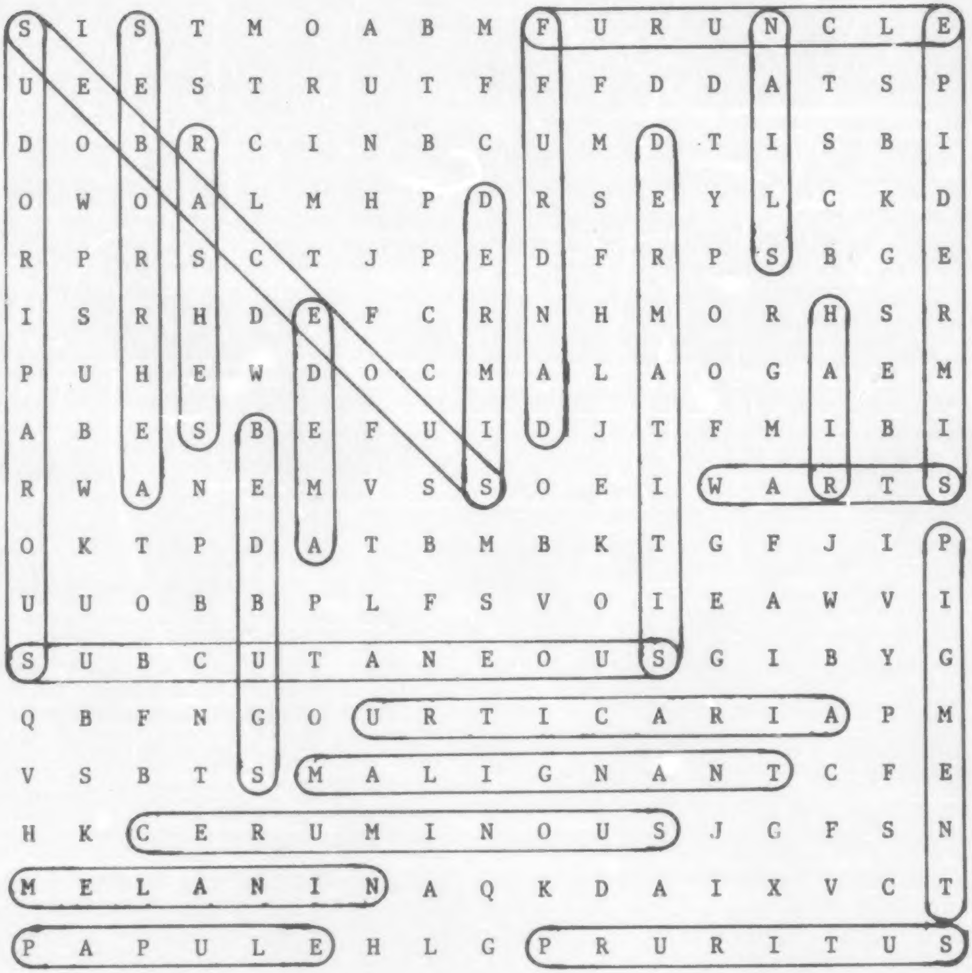
ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1 - Cross Section of the Skin - See labeled diagram on page X-A-8.

THE INTEGUMENTARY SYSTEM
UNIT X-A

Answer to Assignment Sheet #2

ANSWER TO
WORD FIND PUZZLE



S	I	S	T	M	O	A	B	M	F	U	R	U	N	C	L	E
U	E	E	S	T	R	U	T	F	F	F	D	D	A	T	S	P
D	O	B	R	C	I	N	B	C	U	M	D	T	I	S	B	I
O	W	O	A	L	M	H	P	D	R	S	E	Y	L	C	K	D
R	P	R	S	C	T	J	P	E	D	F	R	P	S	B	G	E
I	S	R	H	D	E	F	C	R	N	H	M	O	R	H	S	R
P	U	H	E	W	D	O	C	M	A	L	A	O	G	A	E	M
A	B	E	S	B	E	F	U	I	D	J	T	F	M	I	B	I
R	W	A	N	E	M	V	S	S	O	E	I	W	A	R	T	S
O	K	T	P	D	A	T	B	M	B	K	T	G	F	J	I	P
U	U	O	B	B	P	L	F	S	V	O	I	E	A	W	V	I
S	U	B	C	U	T	A	N	E	O	U	S	G	I	B	Y	G
Q	B	F	N	G	O	U	R	T	I	C	A	R	I	A	P	M
V	S	B	T	S	M	A	L	I	G	N	A	N	T	C	F	E
H	K	C	E	R	U	M	I	N	O	U	S	J	G	F	S	N
M	E	L	A	N	I	N	A	Q	K	D	A	I	X	V	C	T
P	A	P	U	L	E	H	L	G	P	R	U	R	I	T	U	S

THE INTEGUMENTARY SYSTEM
UNIT X-A

UNIT TEST

1. List the components of the INTEGUMENTARY SYSTEM.

2. Name the functions of the skin.

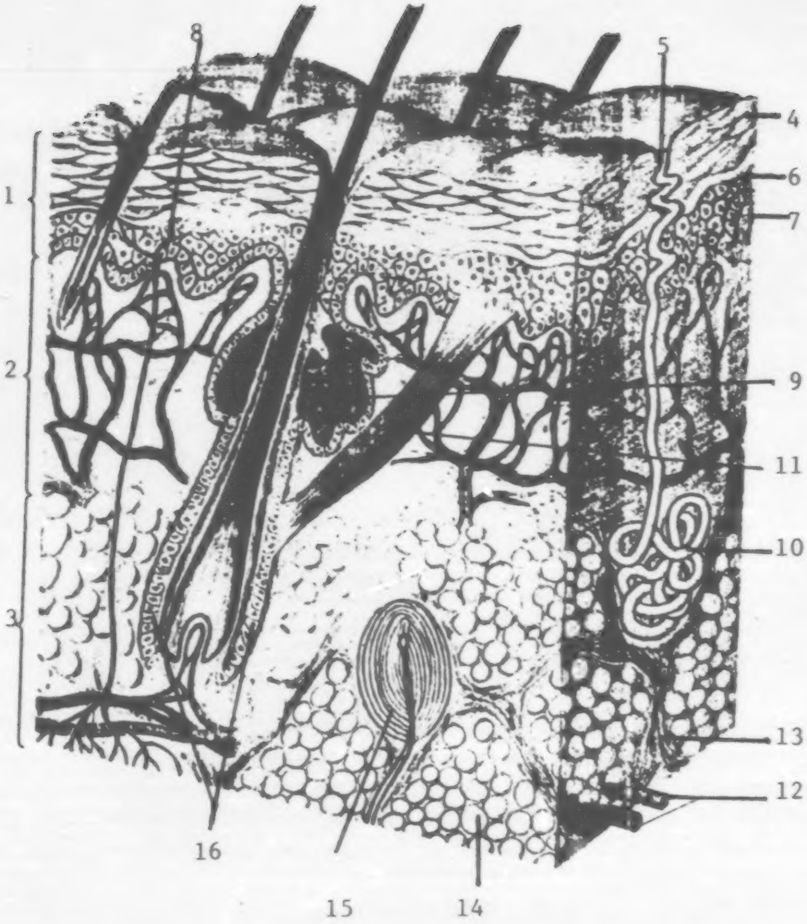
   a.

   b.

   c.

   d.

3. Label the indicated parts of the diagram of the cross section of skin


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

Cross section of the skin

1. ____________________ 9. ____________________

2. ____________________ 10. ____________________

3. ____________________ 11. ____________________

4. ____________________ 12. ____________________

5. ____________________ 13. ____________________

6. ____________________ 14. ____________________

7. ____________________ 15. ____________________

8. ____________________ 16. ____________________

4. Match each gland with its function.

_____ A. secrete sweat

_____ B. Secrete oil

_____ C. Secrete wax

a. sebaceous glands

b. ceruminous glands

c. sudoriparous glands

5. The main function of the hair and nails is _________________.

6. Place an X by the names of skin disorders.

_____ arthritis

_____ acne vulgaris

_____ colitis

_____ herpes simplex

_____ scabies

_____ ringworm

_____ bronchitis

_____ dandruff

_____ eczema

_____ impetigo

_____ warts

_____ vaginitis

_____ carbuncle

_____ plantar wart

7. Match the following terms:

A. pruritus

B. dermatitis

C. Macule

D. Papule

E. Edema

F. Urticaria

G. Furuncle

_____ 1. a boil

_____ 2. itching

_____ 3. an abnormal accumulation of fluid in the intercellular spaces of the body.

_____ 4. hives

_____ 5. a solid elevated lesion of the skin

_____ 6. inflammation of the skin

_____ 7. a spot on the skin that is not elevated above the surface.

8. List the four kinds of burns.

a.

b.

c.

d.

9. Match the classification of a burn with its description.

A. 1st degree	_____	a. the tissues are charred
B. 2nd degree	_____	b. the skin is reddened, burn is superficial
C. 3rd degree	_____	c. the skin is blistered

THE INTEGUMENTARY SYSTEM
UNIT X-A

ANSWERS TO TEST

1. Skin, hair nails, and oil, wax and sweat glands.

2. a. protection of deeper tissues

   b. environmental adjustment

   c. manufacture Vitamin D

   d. regulate body temperature

3. 1. epidermis

   2. corium (dermis)

   3. subcutaneous fascia

   4. horny layer (stratum corneum)

   5. pore (sweat duct opening)

   6. stratum lucidum

   7. growing layer (stratum germinativum)

   8. nerve endings

   9. sebaceous (oil) gland

   10. sudoriferous (sweat) gland

   11. muscle

   12. blood vessels

   13. fibrous connective tissue

   14. adipose (fat) cells

15. pressure receptor

16. hair follicle

4. A. c

B. a

C. b

5. protection

6. ____ arthritis

_X_ acne vulgaris

____ colitis

_X_ herpes simplex

_X_ scabies

_X_ ringworm

____ bronchitis

_X_ dandruff

_X_ eczema

_X_ impetigo

_X_ warts

____ vaginitis

_X_ carbuncle

_X_ plantar wart

7. 1. G

2. A

3. E

4. F

5. D

6. B

7. C

8. a. heat
   b. chemical
   c. electrical
   d. radiant energy
9. a. C
   b. A
   c. B

UNIT X-B

*SKELETAL AND MUSCULAR SYSTEMS

UNIT OBJECTIVE

After completion of this unit, the student will be able to define terms relating to the skeletal and muscular systems. The student will be able to identify bones and muscles of the body and will be able to describe disorders.

SPECIFIC OBJECTIVES

After completion of this unit, the student will be able to:

1. Match terms and definitions relating to skeletal and muscular systems.
2. List the functions and divisions of the skeletal system and identify bone injuries and diseases.
3. Write types of muscles and identify muscle disorders.
4. Label bones in diagrams of skeleton.
5. Label muscles in diagram of body.

***Reprinted with permission of Occupational Curriculum Laboratory, East Texas State University from Anatomy and Physiology Health Occupations Education, 1978.**

UNIT X-B

SKELETAL AND MUSCULAR SYSTEMS

SUGGESTED ACTIVITIES

I. Instructor

  A. Provide objective sheet.

  B. Discuss objective sheet.

  C. Pass out information sheet.

  D. Discuss information sheet.

  E. Make and show transparencies.

  F. Distribute and discuss assignment sheets.

  G. Give test and evaluate results.

II. Student

  A. Read and discuss objective sheet.

  B. Read and discuss material contained in information sheet.

  C. View transparencies.

  D. Complete assignment sheets.

  E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objective sheet

  B. Information sheet

  C. Transparency masters

    1. TM-1--Skeleton, Anterior View

    2. TM-2--Skeleton, Posterior View

    3. TM-3--Muscles of Body--Posterior View

D. Assignment sheets

  1. Assignment Sheet #1--Label Diagram of Skeleton--Anterior View
  2. Assignment Sheet #2--Label Diagram of Skeleton-Posterior View
  3. Assignment Sheet #3--Questions About the Skeletal and Muscular Systems
  4. Assignment Sheet #4--Label Diagrams of Muscles of Body--Posterior View

E. Answers to assignment sheets

F. Unit test

G. Answers to unit test

II. References

A. Books

1. Anderson, Paul D. Clinical Anatomy and Physiology for Allied Health Sciences. Philadelphia, Pennsylvania: W.B. Saunders Co., 1976.
2. Anthony, C.P. Basic Concepts in Anatomy and Physiology. 3rd ed. St. Louis, Missouri: C.V. Mosby Co., 1974.
3. Anthony, C.P. and I.B. Alyn, Structure and Function of the Body. 5th ed. St. Louis, Missouri: C.V. Mosby Co., 1976.
4. Anthony, C.P. and N. J. Kolthoff. Textbook of Anatomy and Physiology. 9th ed. St. Louis, Missouri: C.V. Mosby Co., 1975.
5. Memmler, Ruth Lendeen and Dena Lin Wood. The Human Body in Health and Disease. 4th ed. Philadelphia, Pennsylvania: J.B. Lippincott Co., 1977.

UNIT X-B

SKELETAL AND MUSCULAR SYSTEMS

INFORMATION SHEET

I. Terms and definitions:

A. Abduction--motion away from midline of the body, as raising arm to a shelf (Fig. 1)

B. Adduction--motion toward the midline of the body (Fig. 2)

C. Joint--point of juncture of two or more bones

D. Ligament--tissue which connects bones at a joint

E. Muscle tone--the normal, partially contracted state of muscles

F. Orthopedics--the medical specialty dealing with bones, joints, and muscles

G. Osteo--prefix meaning "bone"

H. Posture--body parts held in the positions that favor best function

I. Rotation--motion around a central axis, as circular motion of head on neck.

J. Synovial fluid--lubricating fluid of joints

K. Tendon--tissue which connects muscles to bone

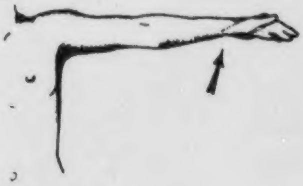


Figure1

Abduction

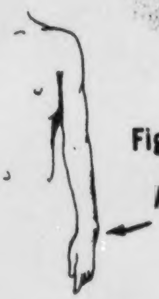


Figure 2

Adduction

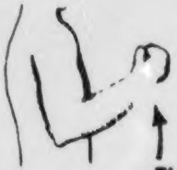


Figure 3

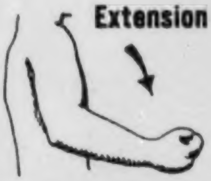


Figure 4

- L. Flexion--decrease in the angle between two bones at their joint (Fig. 3)
- M. Extension--movement that straightens bones at their joint (Fig. 4)

II. Skeletal system

- A. Functions of skeleton
  - 1. Supports and gives shape to body
  - 2. Protects internal organs
  - 3. Makes movement possible
  - 4. Production of blood cells
- B. Divisions of skeleton
  - 1. Axial skeleton
    - a. Skull
      - 1) Cranium
      - 2) Face
    - b. Vertebral column
    - c. Thorax
      - 1) Ribs
      - 2) Sternum
    - d. Ear bones
    - e. Hyoid
  - 2. Appendicular skeleton
    - a. Upper extremities--shoulder girdle, arms, and hands
    - b. Lower extremities--hip girdle, legs, and feet
- C. Bone injuries and diseases
  - 1. Fractures
    - a. Simple fracture--bone is broken but there is no external wound

 b. Compound fracture--bone is broken, skin and soft tissues are torn

 c. Greenstick fracture--incomplete break in which the bone is partially broken and partially bent

2. Dislocations--displacement of bone from its normal position in a joint. The ligaments may be torn and stretched.

3. Bone disorders and disease

 a. Kyphosis--increase in curvature of the spine resulting in a hunchbacked appearance

 b. Lordosis--exaggerated inward curvature in the lumbar region of the spinal column

 c. Osteomyelitis--inflammation of bone

 d. Rickets--bones fail to calcify sufficiently and growth is hampered

 e. Scoliosis--side to side curvature of the spine

 f. Sprain--wrenching of a joint with injury to ligaments

 g. Tuberculosis--bone disease caused by tubercle bacillus

 h. Bursitis--inflammation of the bursa. A bursa is a sac or cavity filled with synovial fluid

 i. Arthritis--inflammation of bones at joints

III. Muscular system

 A. Types of muscles

 1. Skeletal or voluntary muscles--provide for voluntary body movement. Examples are chewing, movements of head, or walking.

 2. Smooth or involuntary muscles--muscles contract independently of the will. Examples are muscles of blood vessels and digestive tract.

3. Cardiac muscle--forms the heart wall and produces heartbeats

B. Muscle disorders

1. Muscular dystrophy--progressive wasting and weakening of muscles

2. Paralysis--muscles do not contract because nerves controlling them are diseased or injured

3. Muscle atrophy--decrease in muscle size due to disease or disuse.

4. Hypertrophy--increase in muscle size resulting from increased use

5. Spasm--sudden, violent, and involuntary contraction of a muscle

C. Examples of major muscles and their function

1. Latissimus dorsi--extends upper arm, helps adduct upper arm

2. Deltoid--abducts upper arm

3. Biceps brachii--flexes lower arm

4. Triceps brachii--extends lower arm

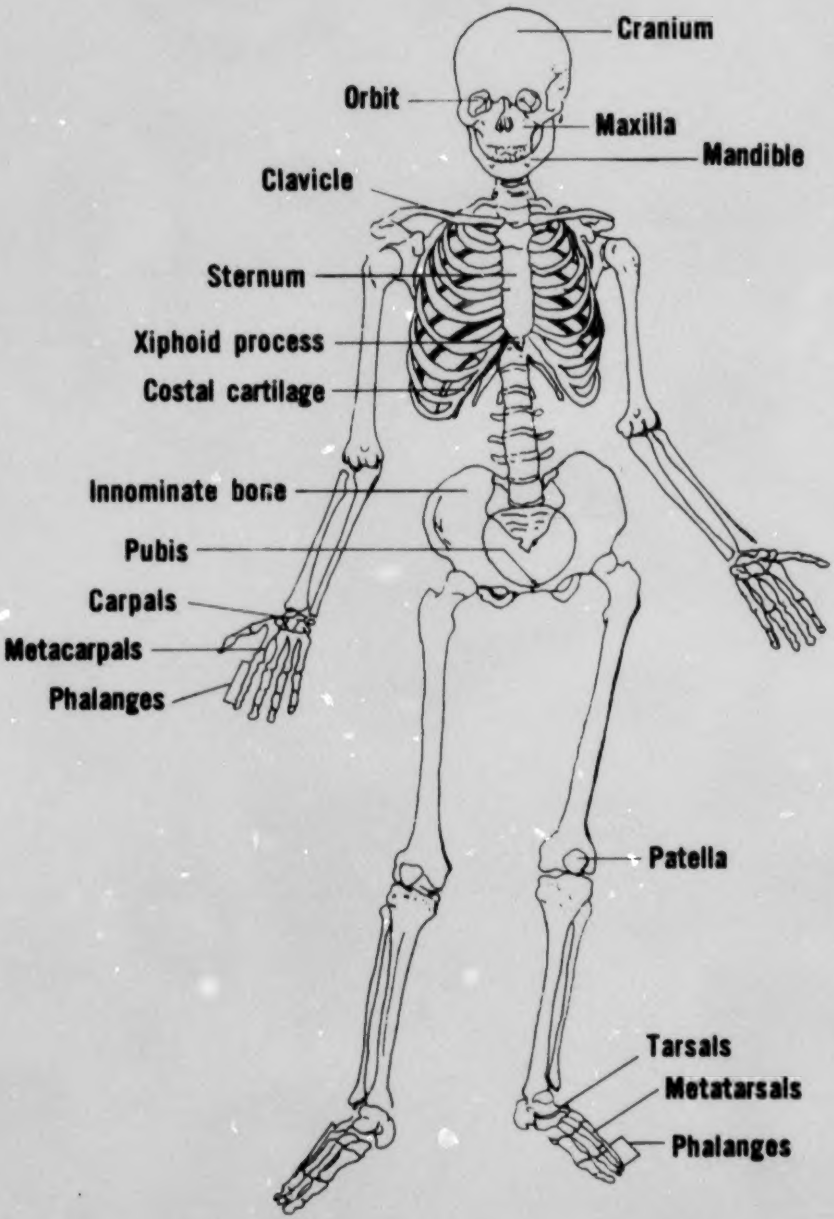
5. Gluteus maximus--extends thigh

6. Trapezius--rotates scapula to left shoulder

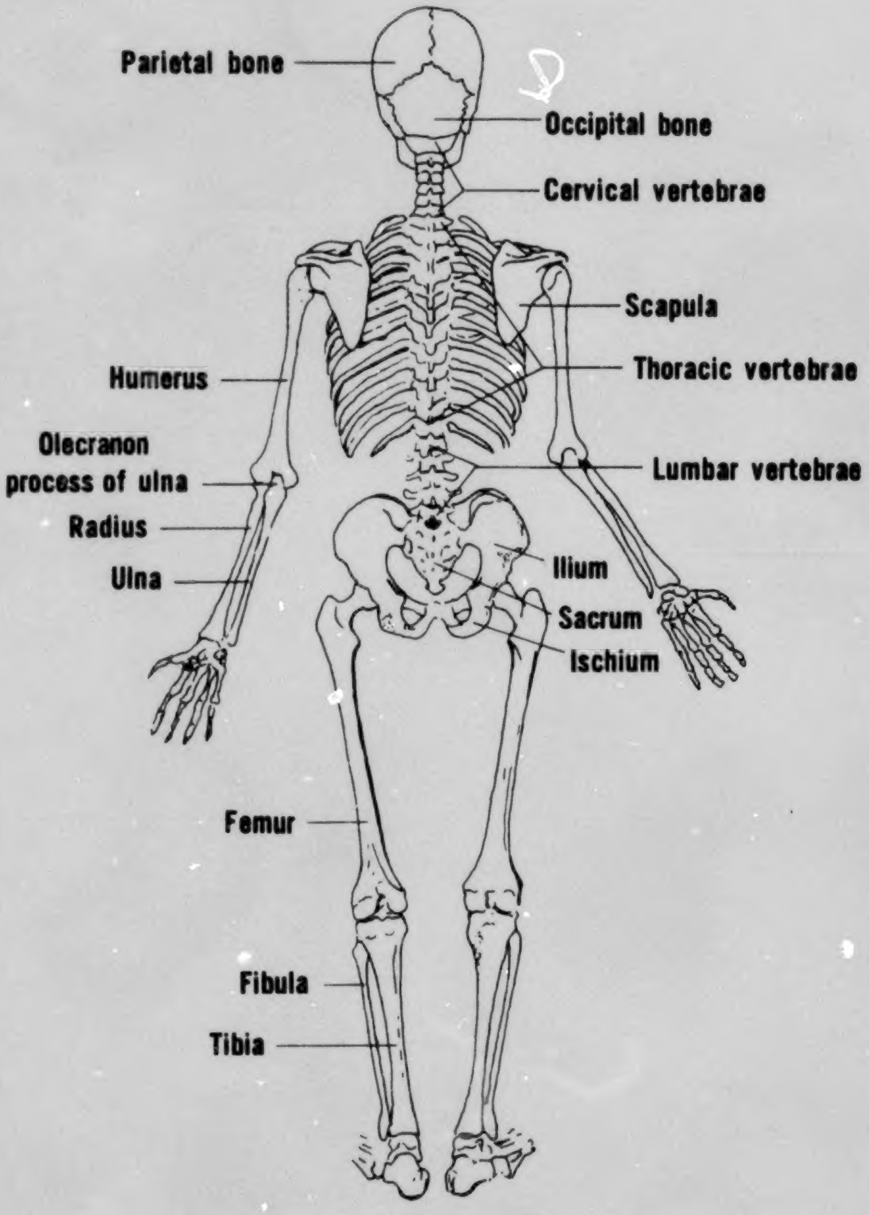
7. Gastrocnemius--flexes leg, adducts and inverts foot

8. *Achilles tendon--*not a muscle but thickest and strongest tendon in body

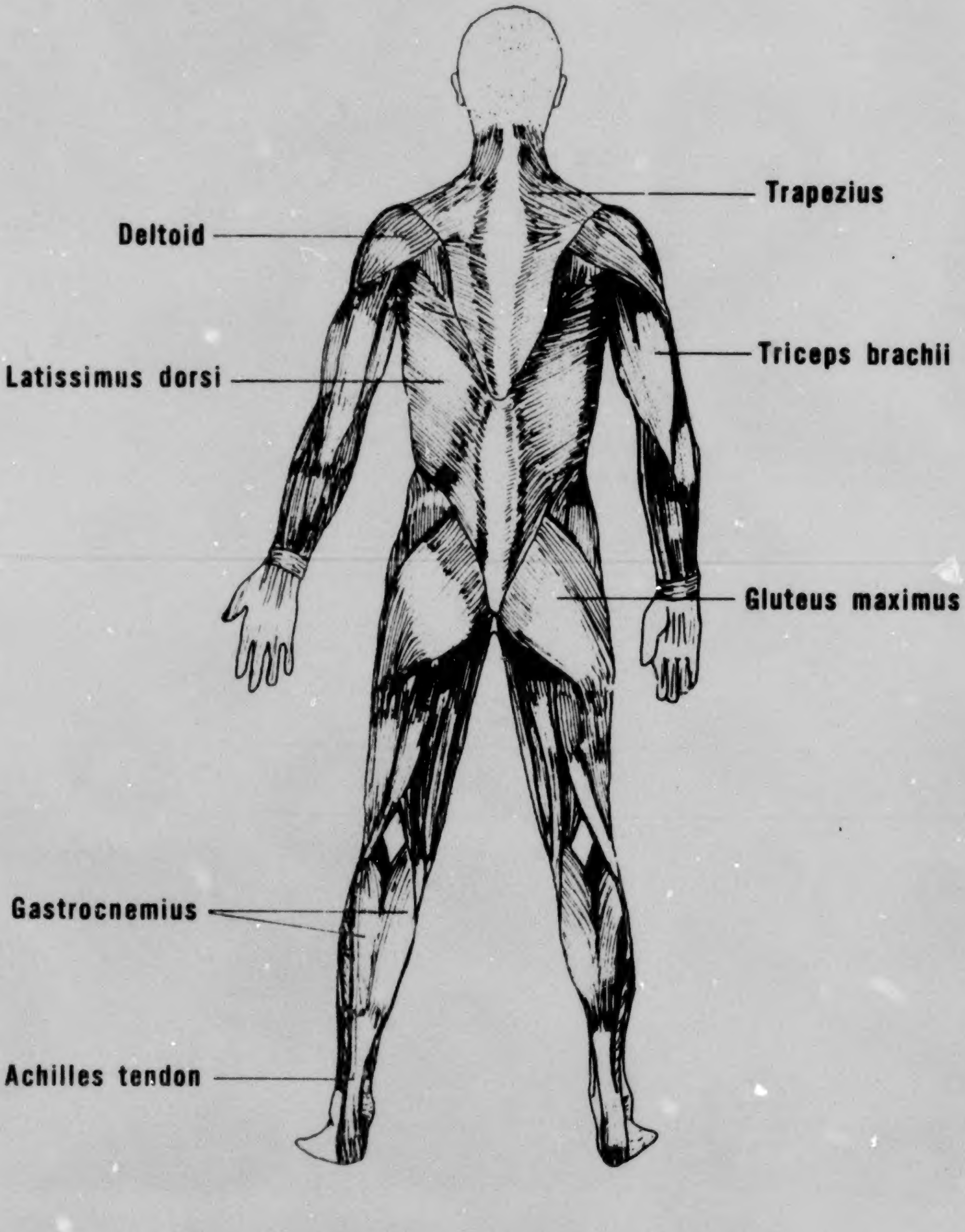
SKELETON, ANTERIOR VIEW


Cranium
Orbit
Maxilla
Mandible
Clavicle
Sternum
Xiphoid process
Costal cartilage
Innominate bone
Pubis
Carpals
Metacarpals
Phalanges
Patella
Tarsals
Metatarsals
Phalanges

SKELETON, POSTERIOR VIEW


Parietal bone
Occipital bone
Cervical vertebrae
Scapula
Humerus
Thoracic vertebrae
Olecranon process of ulna
Lumbar vertebrae
Radius
Ulna
Ilium
Sacrum
Ischium
Femur
Fibula
Tibia

MUSCLES OF THE BODY


Trapezius
Deltoid
Triceps brachii
Latissimus dorsi
Gluteus maximus
Gastrocnemius
Achilles tendon

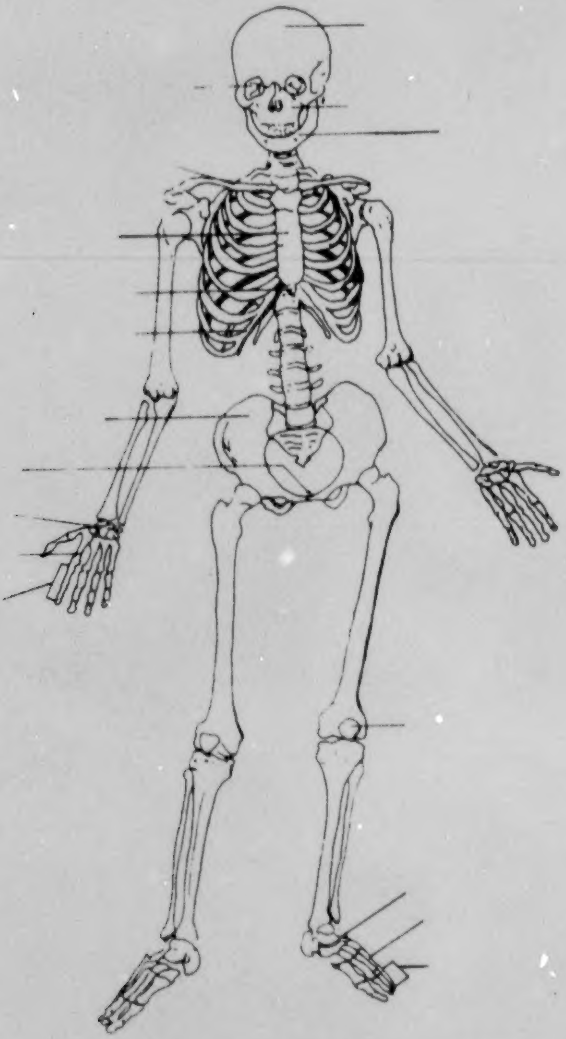
UNIT X-B

SKELETAL AND MUSCULAR SYSTEMS

ASSIGNMENT SHEET #1--LABEL DIAGRAM OF SKELETON-- ANTERIOR VIEW

Using the following terms, label the diagram "Skeleton, Anterior View".

1. cranium
2. orbit
3. maxilla
4. mandible
5. clavicle
6. sternum
7. xiphoid process
8. costal cartilage
9. innominate bone
10. pubis
11. patella
12. carpals
13. metacarpals
14. phalanges
15. tarsals
16. metatarsals
17. phalanges



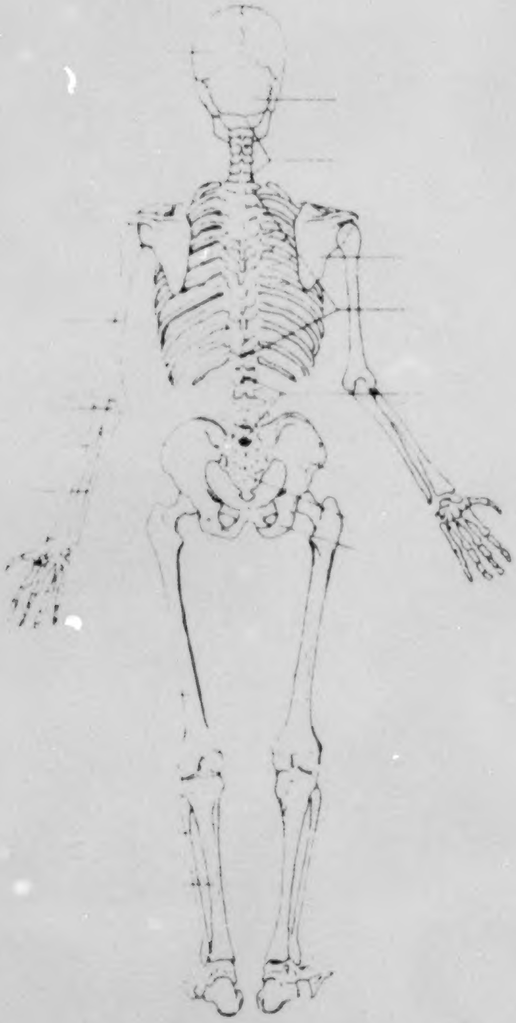
UNIT X-B

SKELETAL AND MUSCULAR SYSTEMS

ASSIGNMENT SHEET #2--LABEL DIAGRAM OF SKELETON--POSTERIOR VIEW

Using the following terms, label the diagram "Skeleton, Posterior View".

1. parietal bone
2. occipital bone
3. cervical vertebrae
4. thoracic vertebrae
5. lumbar vertebrae
6. sacrum
7. ilium
8. ischium
9. humerus
10. olecrannon process of ulna
11. radius
12. ulna
13. femur
14. fibula
15. tibia
16. scapula



UNIT X-B

SKELETAL AND MUSCULAR SYSTEMS

ASSIGNMENT SHEET #3--QUESTIONS ABOUT THE SKELETAL AND MUSCULAR SYSTEMS

Directions: Answer the following questions.

1. List four functions of the skeletal system.

    a.

    b.

    c.

    d.

2. List and describe three types of fractures.

    a.

    b.

    c.

3. List and describe five diseases or disorders of bone.

    a.

    b.

    c.

    d.

    e.

4. List three types of muscles.

    a.

    b.

    c.

5. List and describe five muscle disorders.

   a.

   b.

   c.

   d.

   e.

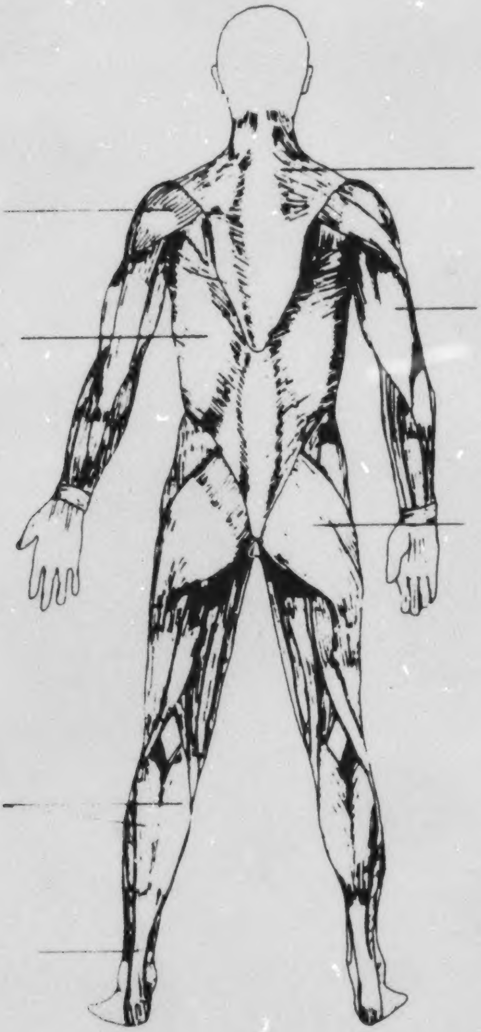
UNIT X-B

SKELETAL AND MUSCULAR SYSTEMS

ASSIGNMENT SHEET #4--LABEL DIAGRAM OF MUSCLES OF BODY

Directions: Using the following terms, label the diagram "Muscles of the Body".

1. latissiums dorsi
2. deltoid
3. trapezius
4. gastrocnemius
5. triceps brachii
6. Achilles tendon
7. gluteus maximus



UNIT X-B

SKELETAL AND MUSCULAR SYSTEMS

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1--Label Diagram of Skeleton--Anterior View: See labeled diagram TM-1.

Assignment Sheet #2--Label Diagram of Skeleton--Posterior View: See labeled diagram TM-2.

Assignment Sheet #3--Questions About the Skeletal and Muscular Systems:

1. A. Supports and gives shape to body

   B. Protects internal organs

   C. Makes movement possible

   D. Production of blood cells

2. A. Simple fracture--bone is broken but there is no external wound

   B. Compound fracture--bone is broken, skin and soft tissues are torn, bone protrudes through skin

   C. Greenstick fracture--incomplete break in which the bone is partially broken and partially bent

3. Answer should include any 5 of the following:

   A. Kyphosis--increase in curvature of the spine resulting in a hunchbacked appearance

   B. Lordosis--exaggerated inward curvature in the lumbar region of the spinal column

   C. Osteomyelitis--inflammation of bone

   D. Rickets--bones fail to calcify sufficiently and growth is hampered

   E. Scoliosis--side to side curvature of the spine

   F. Sprain--wrenching of a joint with injury to ligaments

   G. Tuberculosis--bone disease caused by tubercle bacillus

H. Bursitis--inflammation of the bursa. A bursa is a sac or cavity filled with synovial fluid.

I. Arthritis--inflammation of bones at the joints

4. A. Skeletal (voluntary, striated)

B. Smooth (involuntary)

C. Cardiac

5. A. Muscular dystrophy--progressive wasting and weakness of muscles

B. Paralysis--muscles do not contract because nerves controlling them are diseased or injured

C. Muscle atrophy--decrease in muscle size due to disuse

D. Hypertrophy--increase in muscle size resulting from increased use

E. Spasm--sudden, violent, and involuntary contraction of a muscle

Assignment Sheet #4--Label Diagrams of Muscles of Body: See labeled diagram TM-3.

UNIT X-B

SKELETAL AND MUSCULAR SYSTEMS

UNIT TEST

1. Match the terms on the right with their correct definitions.

_____ a. Prefix meaning "bone"

_____ b. Body parts held in the positions that favor best function

_____ c. Tissue which connects bones at a joint

_____ d. Motion away from midline of the body, as raising arm to a shelf

_____ e. Point of juncture of two or more bones

_____ f. The medical specialty dealing with bones, joints, and muscles

_____ g. Motion toward the midline of the body

_____ h. Motion around a central axis, as circular motion of head on neck

_____ i. Movement that straightens bones at their joints

_____ j. Tissue which connects muscles to bone

_____ k. The normal, partially contracted state of muscles

_____ l. Decrease in the angle between two bones at their joint

_____ m. Lubricating fluid of the joints

1. abduction
2. adduction
3. extension
4. flexion
5. joint
6. ligament
7. muscle tone
8. orthopedics
9. osteo
10. posture
11. rotation
12. synovial fluid
13. tendon

2. a. List 4 functions of the skeleton

   1.

   2.

   3.

   4.

   b. Indicate whether each of the following is a part of the axial or appendicular skeleton

   1. leg ____________________
   2. face ____________________
   3. ribs ____________________
   4. ear bones ____________________
   5. shoulder girdle ____________________
   6. hands ____________________
   7. feet ____________________
   8. vertebrae ____________________
   9. arm ____________________
   10. skull ____________________

   c. Complete the following statements, using one of the terms listed below.

   simple fracture
   compound fracture
   greenstick fracture
   dislocation
   kyphosis
   lordosis
   osteomyelitis
   bursitis
   arthritis
   tuberculosis
   sprain
   scoliosis
   rickets

   1. An exaggerated inward curvature of the spine resulting in a hunchbacked appearance is ____________________.

   2. A fracture in which the bone is broken but there is no external wound is a (an) ____________________.

   3. An inflammation of the bursa is ______________.

4. An inflammation of bones at the joints is
____________________.

5. A displacement of bone from its normal position in a joint is ____________________.

6. An incomplete break in which the bone is partially broken and partially bent is a (an)
____________________.

7. An inflammation of bone is ____________________.

8. The wrenching of a joint with injury to the ligaments is a (an) ____________________.

9. A bone disease caused by the tubercle bacillus is ____________________.

10. A fracture in which the bone is broken, skin and soft tissues are torn, and bone protrudes through the skin is a (an) ____________________.

11. A disease in which the bones fail to calcify sufficiently and growth is hampered is
____________________.

12. The side to side curvature of the spine is
____________________.

13. An exaggerated inward curvature in the lumbar region of the spinal column is ________________.

3. a. List three types of muscles

____

____

____

b. Identify the following muscle disorders.

1. muscular dystrophy--

2. paralysis--

3. muscle atrophy--

4. muscle hypertrophy--

5. muscle spasm--

4. a. Label the following parts of the anterior view of the skeleton.

1. cranium
2. orbit
3. maxilla
4. mandible
5. clavicle
6. sternum
7. xiphoid process
8. costal cartilage
9. innominate bone
10. pubis
11. patella
12. carpals
13. metacarpals
14. phalanges
15. tarsals
16. metatarsals

b\. Label the following parts of the posterior view of the skeleton.

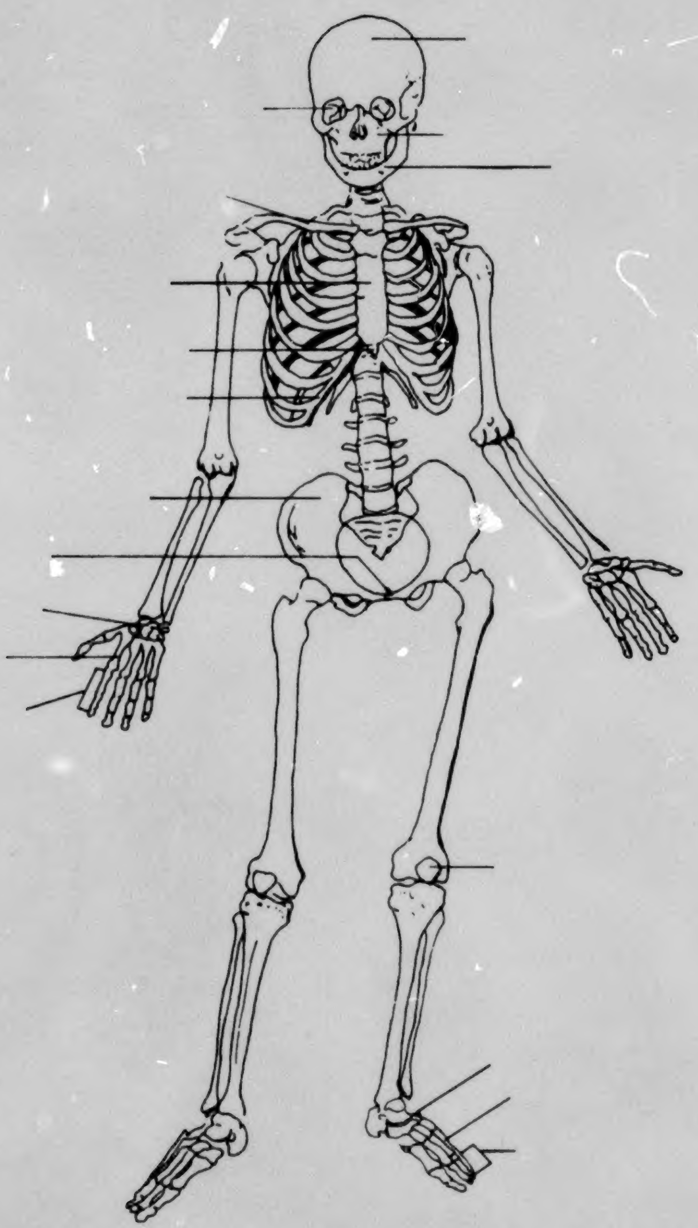
1. parietal bone
2. occipital bone
3. cervical vertebrae
4. thoracic vertebrae
5. lumbar vertebrae
6. sacrum
7. ilium
8. ischium
9. humerus
10. olecranon process of ulna
11. radius
12. ulna
13. femur
14. fibula
15. tibia
16. scapula

5. Label the following parts of the diagram--"Muscles of the Body"

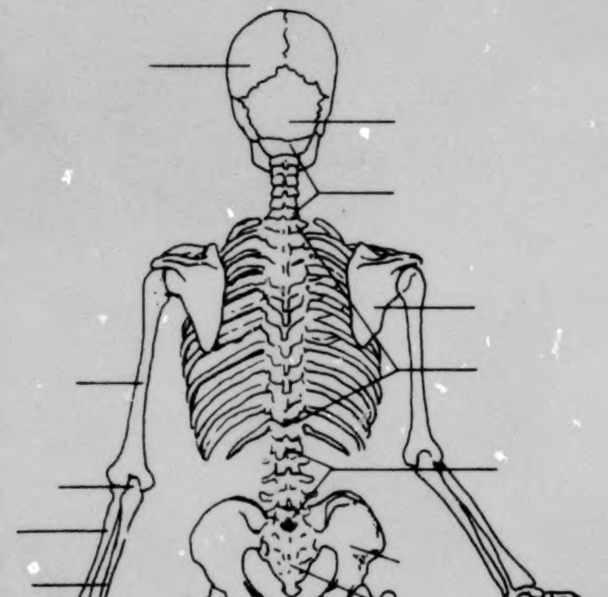
    1. latissimus dorsi
    2. deltoid
    3. triceps brachii
    4. trapezius
    5. gluteus maximus
    6. gastrocnemius
    7. Achilles tendon

    (NOTE: If activities #4 and #5 have not been completed prior to the test, ask the instructor when they should be completed.)

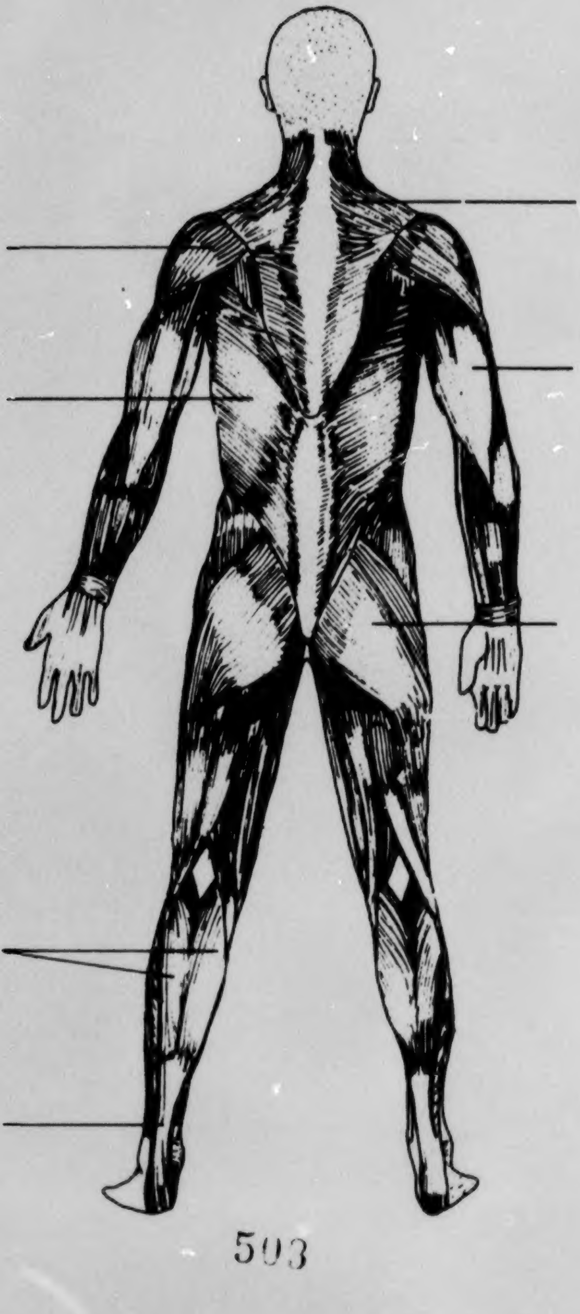
SKELETON, ANTERIOR VIEW



SKELETON, POSTERIOR VIEW



MUSCLES OF THE BODY



UNIT X-B

SKELETAL AND MUSCULAR SYSTEMS

ANSWERS TO UNIT TEST

1. a. 9
   b. 10
   c. 6
   d. 1
   e. 5
   f. 8
   g. 2
   h. 11
   i. 3
   j. 13
   k. 7
   l. 4
   m. 12

2. a. 1. supports and gives shape to body
      2. protects internal organs
      3. makes movement possible
      4. production of blood cells

   b. 1. leg appendicular
      2. face axial
      3. ribs axial
      4. ear bones axial
      5. shoulder girdle appendicular
      6. hands appendicular
      7. feet appendicular
      8. vertebrae axial
      9. arm appendicular
      10. skull axial

   c. 1. kyphosis
      2. simple fracture
      3. bursitis
      4. arthritis
      5. dislocation
      6. green stick
      7. osteomyelitis
      8. sprain
      9. tuberculosis
      10. compound fracture

11. rickets

12. scoliosis

13. lordosis

3. a. skeletal or voluntary
smooth or involuntary
cardiac

b. 1. muscular dystrophy--progressive wasting and weakness of muscles

2. paralysis--muscles do not contract because nerves controlling them are diseased or injured

3. muscle atrophy--decrease in muscle size due to disease or disuse.

4. hypertrophy--increase in muscle size resulting from increased use

5. spasm--sudden, violent, and involuntary contraction of a muscle

4. Evaluated to the satisfaction of the instructor.

5. Evaluated to the satisfaction of the instructor.

UNIT X-C

*THE DIGESTIVE SYSTEM

UNIT OBJECTIVE

After completing this unit, students will be able to define terms relative to digestion, locate parts of the digestive system on a diagram and discuss digestive processes. The students will also be able to identify disorders of the digestive tract. This knowledge will be evidenced through demonstration and by satisfactory completion of a unit test.

SPECIFIC OBJECTIVES

After completing this unit of instruction, the student will be able to:

1. Match terms and definitions relative to the digestive system
2. Locate the parts of the digestive system and give the function of each part of the digestive system
3. List the digestive juices, their source, and action
4. Identify disorders of the digestive tract
5. Locate the parts of the digestive system on a diagram
6. Identify enzymes
7. Recognize names of digestive disorders

*Reprinted with permission of Occupational Curriculum Laboratory, East Texas State University from Anatomy and Physiology Health Occupations Education, 1978.

UNIT X-C

THE DIGESTIVE SYSTEM

SUGGESTED ACTIVITIES

I. Instructor

- A. Provide objective sheet
- B. Discuss objective sheet
- C. Pass out information sheet
- D. Discuss information sheet
- E. Make and show transparencies
- F. Distribute and discuss assignment sheets
- G. Use torso model or chart of digestive system to demonstrate parts of digestive system
- H. Give test and evaluate results

II. Student

- A. Read objective sheet
- B. Discuss objective sheet
- C. Read material contained in information sheet
- D. Discuss information sheet
- E. Complete assignment sheets
- F. Observe or participate in demonstration of parts of digestive sytem using torso model or chart
- G. Take test

INSTRUCTIONAL MATERIALS

I. Included in this unit

- A. Objectives
- B. Information sheet

C. Transparency masters

  1. TM-1--The Digestive System

  2. TM-2--Digestive Juices and Enzymes

D. Assignment sheets

  1. Assignment Sheet #1--Labeling Parts of the Digestive System

  2. Assignment Sheet #2--Identifying Enzymes and Their Action

  3. Assignment Sheet #3--Word Find Puzzle

E. Answers to assignment sheets

F. Test

G. Answers to test

II. References: Books

A. Anderson, Paul D. Clinical Anatomy and Physiology for Allied Health Sciences. Philadelphia, Pennsylvania: W.B. Saunders, 1976. pp. 366-397.

B. Anthony, Catherine Parker and Irene B. Alyn. Structure and Function of the Body. 5th ed. St. Louis, Missouri: C.V. Mosby Company, 1976. pp. 98-111.

C. Anthony, Catherine Parker and Norma Jane Kolthoff. Textbook of Anatomy and Physiology. 9th ed. St. Louis, Missouri: C.V. Mosby Company, 1975. pp. 384-442.

D. Jacob, Stanley W. and Clarice Ashworth Francone. Structure and Function in Man. 3rd ed. Philadelphia, Pennsylvania: W.B. Saunders Company, 1974. pp. 423-462.

E. Memmler, Ruth Lundeen and Dena Lin Wood. The Human Body in Health and Disease. 4th ed. Philadelphia, Pennsylvania: J.B. Lippincott Company, 1977. pp. 197-213.

UNIT X-C

THE DIGESTIVE SYSTEM

INFORMATION SHEET

I. Identification of terms

A. Absorption--the taking up of fluids or other substances by the skin or mucous membrane

B. Alimentary canal--the continuous tube which extends from the mouth to the anus. The process of digestion takes place in the alimentary canal.

C. Bile--digestive juice secreted by the liver

D. Bolus--a rounded mass of chewed food ready to be swallowed

E. Chyme--the material formed by the mixing and partial digestion of food in the stomach

F. Defecation--the discharge of fecal material from the rectum

G. Deglutition--the act of swallowing

H. Digestion--the changing of insoluble food materials to a soluble form by the action of enzymes

I. Enzyme--the protein substances produced by the cells that bring about chemical reactions in digestion

J. Feces--body waste, residue of digestion, discharged from anus

K. Glycogen--chemical form in which extra carbohydrate is stored in the liver

L. Heparin--compound produced by the liver which prevents blood clotting

M. Malnutrition--the lack of needed food in the body or improper absorption and distribution of food by the body

N. Mastication--chewing

- O. Peristalsis--wavelike motion of the muscle tissue of the alimentary canal which moves the food through the digestive tube
- P. Rugae--folds, particularly the folds of the mucous membrane lining of the stomach

II. Organs of digestion

- A. Mouth
  - 1. Functions
    - a. receives food
    - b. prepares food for digestion
    - c. speech
  - 2. Structures contained in mouth
    - a. tongue - functions
      - 1) speech
      - 2) guides food
      - 3) contains taste buds which identify sweet, salt, sour, and bitter tastes
    - b. teeth
      - 1) incisors - cutting
      - 2) canines - tearing and shredding
      - 3) premolars - grinding, crushing
      - 4) molars - grinding, crushing
        - a) deciduous (baby) teeth (20)
        - b) permanent teeth (32)
    - c. three pairs of salivary glands
      - 1) name and location
        - a) parotid - below and in front of ear
        - b) submandibular - near body of lower jaw

c) sublingual - under tongue

2) functions of saliva

a) dissolves food in mouth

b) makes it easier to chew food

c) contains enzyme, ptyalin, which digests starch

B. Pharynx (throat)

1. Tonsils--lymphatic tissue that guards entrance of alimentary and respiratory tracts from bacterial invasion

2. Soft palate--forms back of roof of mouth

3. Uvula--prevents food and liquid from entering nasal cavity and upper pharynx

4. Epiglottis--prevents aspiration of food into trachea

C. Esophagus--connects pharynx and stomach

D. Stomach

1. Functions

a. receives swallowed food and passes it on to small intestine

b. secretes gastric juice

c. churns food by contractions of muscles

d. carries on limited absorption of water, alcohol, and some drugs

2. Structure

a. cardiac valve--controls opening of stomach from esophagus

b. rugae--fold in lining of stomach which unfold as stomach fills

c. pyloric valve--controls opening of stomach into small intestine

E. Small intestine

  1. Divisions

    a. duodenum--first 10-12 inches of small intestine

    b. jejunum--succeeding 8 feet of small intestine

    c. ileum--last 12 feet of small intestine

  2. Functions

    a. completes digestion of food begun in stomach

    b. absorbs end products of digestion into blood and lymph

F. Large intestine

  1. Divisions

    a. cecum--blind sac projecting from large intestine near juncture with small intestine

    b. appendix--small blind tube extending from cecum

    c. ascending colon

    d. transverse colon

    e. descending colon

    f. sigmoid colon

    g. rectum

    h. anal canal

    i. anus

  2. Functions

    a. absorption of water

    b. elimination of wastes of digestion

G. Accessory organs

  1. Liver

    a. Location--right hypochondrium and part of epigastrium

    b. Functions

      1) secretion of bile

      2) removal of poisons absorbed from intestine

      3) metabolism of carbohydrates, proteins, and fats

      4) formation of antibodies
      5) **stores iron, Vitamins A, B_{12} and D.**

  2. Gall bladder

    a. Location--undersurface of liver

    b. Functions

      1) stores and concentrates bile

      2) ejects bile into duodenum as needed during digestion

  3. Pancreas

    a. Location--lies in curve of duodenum

    b. Functions--

      1) secretes pancreatic juice which contains digestive enzymes

      2) manufactures insulin which regulates the amount of glucose used in tissues. This is not a digestive process.

III. Digestive juices

  A. Saliva--contains ptyalin which changes starch to double sugar

  B. Gastric juice

    1. Hydrochloric acid

        a. softens connective tissues in meat
        b. kills some pathogenic bacteria
        c. activates gastric enzymes
    2. Enzymes
        a. pepsin--begins protein digestion
        b. lipase--digests fats
  C. Pancreatic juice--contains enzymes
    1. Amyolpsin--acts on starches
    2. Trypsin--acts on proteins
    3. Lipase--acts on fats
  D. Intestinal juice--contains enzymes
    1. Lactase--changes complex sugar to simple sugar
    2. Maltase--changes complex sugar to simple sugar
    3. Sucrase--changes complex sugar to simple sugar
  E. Bile--breaks down fats

IV. Disorders of digestive system
  A. Mouth and teeth
    1. Dental caries--tooth decay
    2. Gingivitis--infection of gum
    3. Mumps--viral infections of the salivary glands
    4. Pyorrhea--inflammation of tooth socket
    5. Stomatitis--infection of lining of mouth
  B. Stomach
    1. Flatulence--excessive amount of gas in stomach or intestine
    2. Gastritis--inflammation of the lining of the stomach

   3. Heartburn--burning sensation in cardiac portion of stomach

   4. Nausea--feeling of illness following distention or irritation of stomach as a result of mechanical or nervous factors

   5. Pyloric stenosis--abnormal constriction of pyloric valve

   6. Stomach cancer--malignant tumor of the lining of the stomach

   7. Ulcer--an area of mucous membrane in which the tissues are gradually disintegrating (may be stomach or duodenum)

   8. Vomiting--reverse peristalsis causing ejection of stomach contents through the mouth

C. Small and large intestines

   1. Appendicitis--inflammation of the appendix

   2. Constipation--abnormal delay in, or infrequent bowel movement

   3. Diarrhea--abnormally frequent, watery, bowel movement

   4. Diverticulitis--inflammation of the diverticuli (distended sacs) of the colon

   5. Dysentery--inflammation of mucosal lining of intestines

D. Liver

   1. Cirrhosis--chronic disease in which active liver cells are replaced by scar tissue

   2. Hepatitis--inflammation of the liver

E. Gall bladder

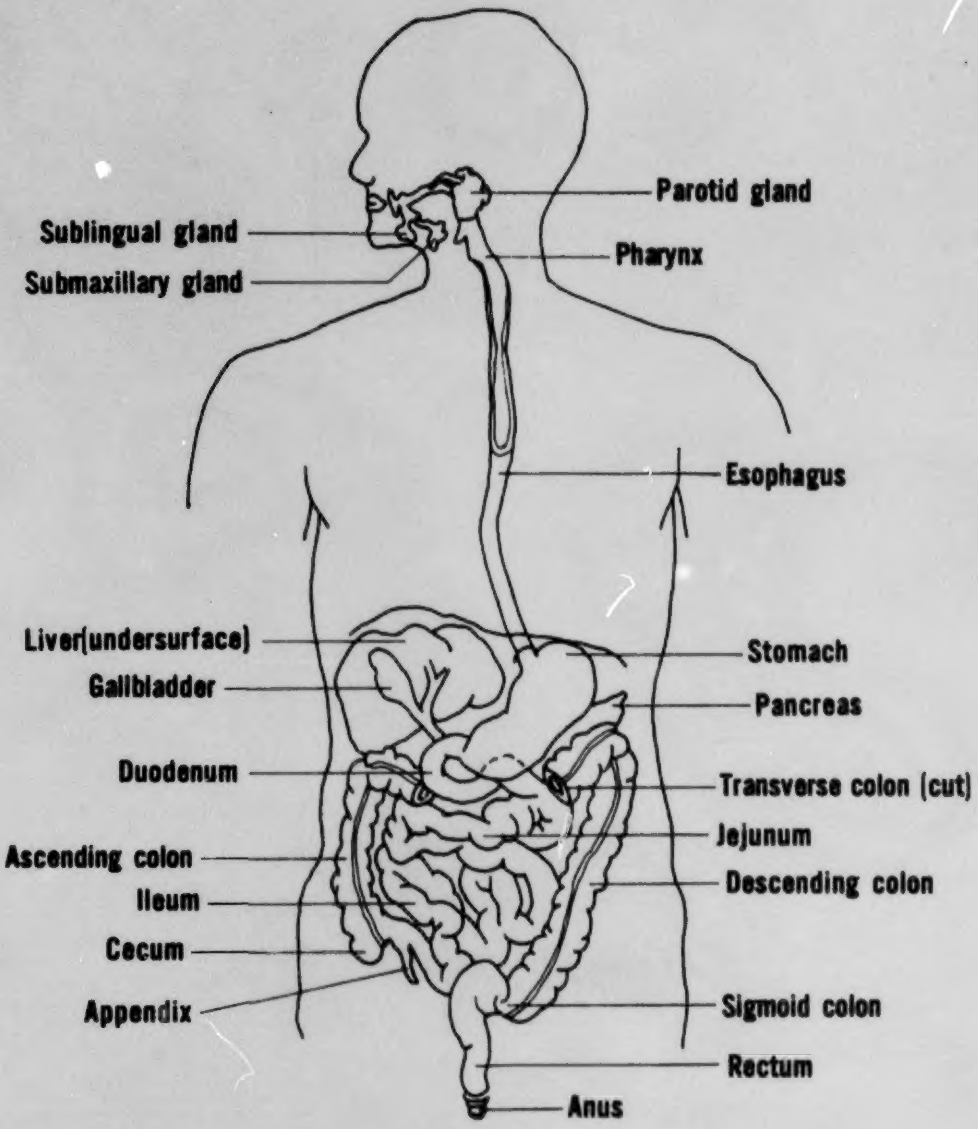
   1. Cholecystitis--inflammation of the gall bladder

   2. Cholelithiasis--presence of stones in gall bladder

F. Pancreas

1. Diabetes--disease in which sugar is not used by the cells because of a deficiency of insulin. This is not a digestive disorder.
2. Pancreatitis--inflammation of the pancreas

Parts of the Digestive System


Parotid gland
Sublingual gland
Pharynx
Submaxillary gland
Esophagus
Liver(undersurface)
Stomach
Gallbladder
Pancreas
Duodenum
Transverse colon (cut)
Jejunum
Ascending colon
Descending colon
Ileum
Cecum
Sigmoid colon
Appendix
Rectum
Anus

DIGESTIVE JUICES AND ENZYMES

Digestive juices and enzymes	Source	Place of Action	Action of enzyme or digestive juice
Saliva	Salivary glands	Mouth	
Ptyalin			Begins starch digestion
Gastric juice	Stomach	Stomach	
Pepsin			Begins protein digestion
Lipase			Emulsifies fats
Rennin (children)			Curdles milk
Hydrochloric acid			Softens connective tissue in meat Kills some pathogenic bacteria Activates gastric enzymes
Pancreatic juice	Pancreas	Small intestine	
Trypsin			Acts on protein
Amylopsin			Acts on starch
Lipase			Acts on fats
Intestinal juice	Small intestine	Small intestine	
Enterokinase			Acts on protein
Sucrase			Changes sucrose to simple sugar
Lactase			Changes lactose to simple sugar
Maltase			Changes maltose to simple sugar
Bile	Liver	Small intestine	Emulsifies fats

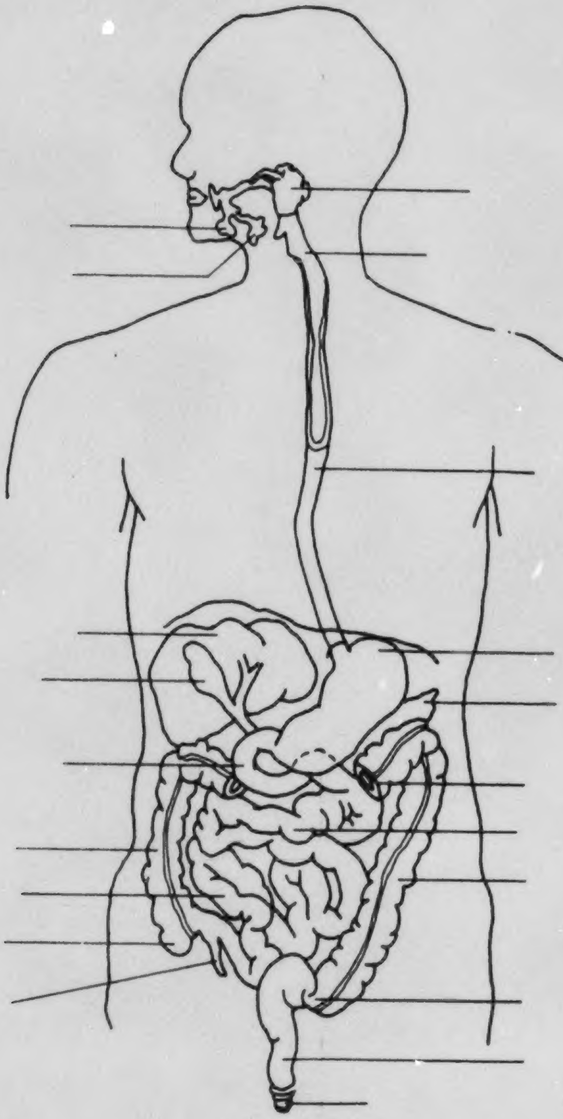
TM-2

UNIT X-C

THE DIGESTIVE SYSTEM

ASSIGNMENT SHEET #1--LABELING PARTS OF THE DIGESTIVE SYSTEM

Directions: Label the indicated parts of the diagram of the digestive system.



UNIT X-C

THE DIGESTIVE SYSTEM

ASSIGNMENT SHEET #2--IDENTIFYING ENZYMES AND THEIR ACTION

Place the name of the enzyme that acts on each of the foods listed, in the blank spaces provided. Use the enzymes listed below for your answers.

amylopsin
enterokinase
lactase
lipase
maltase
pepsin
ptyalin
rennin
sucrase

ENZYME	SOURCE	ACTION
1. ______________	gastric juice	protein digestion
2. ______________	gastric juice	emulsifies fats
3. ______________	intestinal juice	acts on protein
4. ______________	saliva	begins starch digestion
5. ______________	pancreatic juice	acts on starch
6. ______________	intestinal juice	changes sucrose to simple sugar
7. ______________	gastric juice	curdles milk
8. ______________	intestinal juice	changes maltose to simple sugar
9. ______________	intestinal juice	changes lactose to simple sugar

UNIT X-C

THE DIGESTIVE SYSTEM

ASSIGNMENT SHEET #3--WORD FIND PUZZLE

Directions: The following terms which are disorders of the digestive system can be found in the puzzle. They may be written forward, backward, vertically, horizontally, or diagonally. Circle each term as you find it.

appendicitis
cancer
cholecystitis
cholelithiasis
cirrhosis
dental caries
diabetes
diarrhea
diverticulitis
dysentery
flatulence
gingivitis
heartburn
hepatitis
mumps
pyloric stenosis
pyorrhea
stomatitis
ulcer
vomiting

WORD FIND PUZZLE

D	P	Y	O	R	R	H	E	A	A	X	T	S	O	P	F	Q
E	A	O	I	C	U	E	S	P	M	U	M	T	U	L	V	R
N	D	O	M	I	J	A	I	F	D	E	D	A	A	C	S	S
T	Y	O	E	R	T	R	A	B	I	Q	R	T	U	S	S	I
A	S	N	R	R	Y	T	O	L	A	P	U	S	G	O	I	S
L	E	Y	T	H	T	B	N	K	B	L	S	W	I	L	T	O
C	N	C	E	O	I	U	J	L	E	G	I	R	N	E	I	N
A	T	N	S	S	R	R	O	N	T	N	T	M	G	C	L	E
R	E	Y	T	I	O	N	C	U	E	I	I	O	I	Y	U	T
I	R	O	Y	S	N	E	O	T	S	T	C	E	V	S	C	S
E	Y	L	G	C	Y	D	N	R	T	I	I	N	I	T	I	C
S	T	O	M	A	T	I	T	I	S	M	D	O	T	I	T	I
O	E	R	O	N	E	C	R	B	J	O	N	I	I	T	R	R
B	C	B	D	C	R	E	C	L	U	V	E	A	S	I	E	O
A	T	F	X	E	S	I	T	I	T	A	P	E	H	S	V	L
D	I	A	R	R	H	E	A	N	Y	Z	P	B	C	R	I	Y
O	C	H	O	L	E	L	I	T	H	I	A	S	I	S	D	P

UNIT X-C

THE DIGESTIVE SYSTEM

ANSWERS TO ASSIGNMENT SHEET

Assignment Sheet #1 -

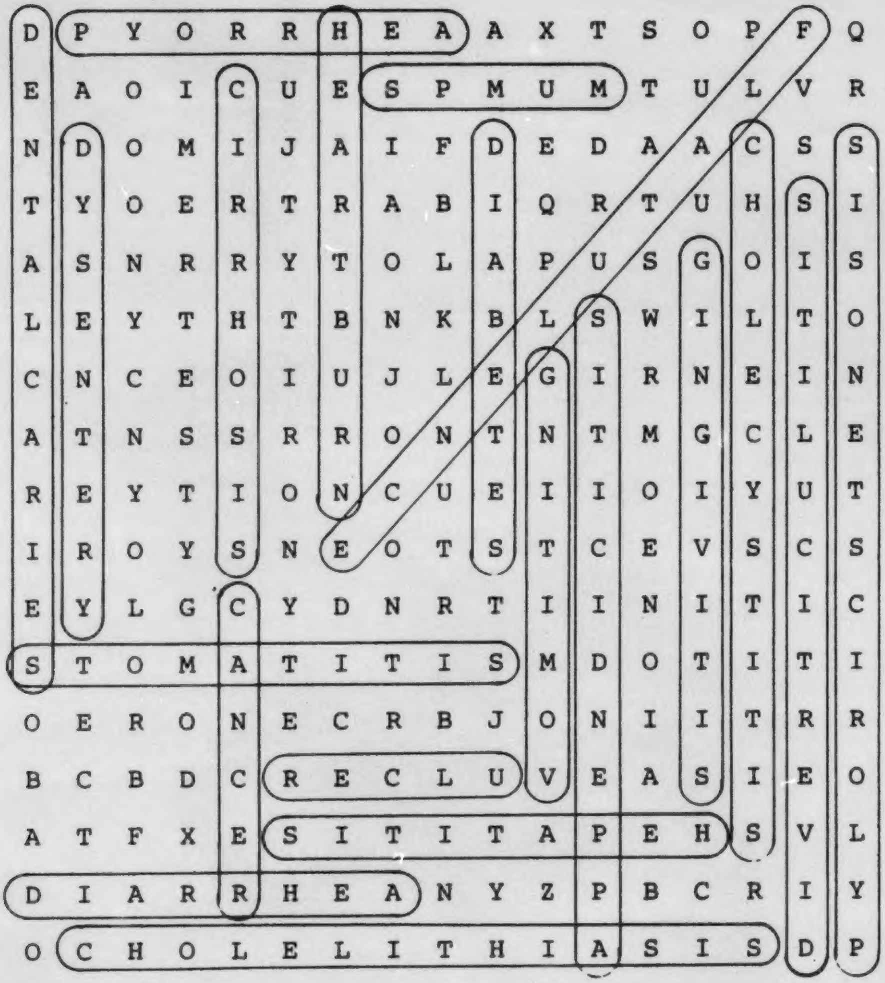
See Transparency Master TM-1

Assignment Sheet #2

1. pepsin
2. lipase
3. enterokinase
4. ptyalin
5. amylopsin
6. sucrase
7. rennin
8. maltase
9. lactase

Answer to Assignment Sheet #3

ANSWER TO
WORD FIND PUZZLE



```
D P Y O R R H E A A X T S O P F Q
E A O I C U E S P M U M T U L V R
N D O M I J A I F D E D A A C S S
T Y O E R T R A B I Q R T U H S I
A S N R R Y T O L A P U S G O I S
L E Y T H T B N K B L S W I L T O
C N C E O I U J L E G I R N E I N
A T N S S R R O N T N T M G C L E
R E Y T I O N C U E I I O I Y U T
I R O Y S N E O T S T C E V S C S
E Y L G C Y D N R T I I N I T I C
S T O M A T I T I S M D O T I T I
O E R O N E C R B J O N I I T R R
B C B D C R E C L U V E A S I E O
A T F X E S I T I T A P E H S V L
D I A R R H E A N Y Z P B C R I Y
O C H O L E L I T H I A S I S D P
```

UNIT X-C

THE DIGESTIVE SYSTEM

UNIT TEST

1. Match the terms relating to the digestive system to the correct definition, using number answers.

_____ a. Chewing

_____ b. Body waste, residue of digestion, discharged from anus

_____ c. Chemical form in which extra carbohydrate is stored in the liver

_____ d. Wavelike motion of the muscle tissue of the alimentary canal which moves food through the digestive tract

_____ e. The taking up of fluids or other substances by the skin or mucous membrane

_____ f. Digestive juice secreted by the liver

_____ g. The act of swallowing

_____ h. Compound produced by the liver which prevents blood clotting

_____ i. Folds-particularly the folds of the mucous membrane lining the stomach

_____ j. The changing of insoluble food materials to a soluble form by the action of enzymes

1. Absorption
2. Alimentary canal
3. Bile
4. Bolus
5. Chyme
6. Defecation
7. Deglutition
8. Digestion
9. Enzyme
10. Feces
11. Glycogen
12. Heparin
13. Malnutrition
14. Mastication
15. Peristalsis
16. Rugae

_____ k. The continuous tube which extends from the mouth to the anus. The process of digestion takes place in this tube.

_____ l. The lack of needed food in the body or improper absorption and distribution of food by the body

_____ m. The protein substances produced by the cells that bring about chemical reactions in digestion

_____ n. A rounded mass of chewed food ready to be swallowed

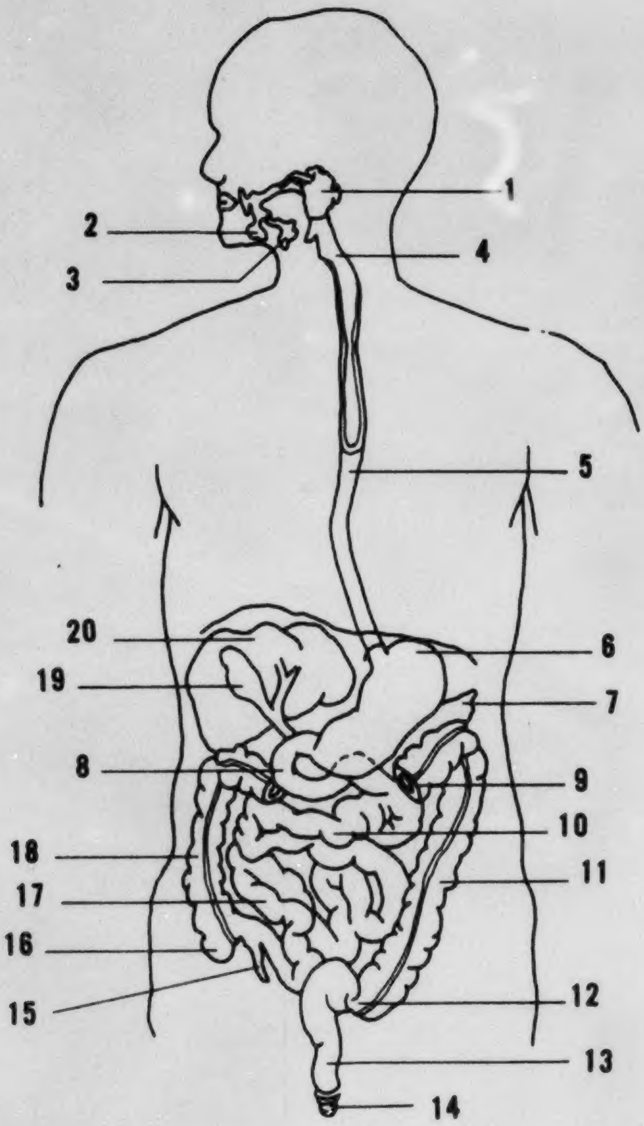
_____ o. The discharge of fecal material from the rectum

_____ p. The material formed by the mixing and partial digestion of food in the stomach

2. A. Label the indicated parts of the diagram of the digestive system.

1. ____________________
2. ____________________
3. ____________________
4. ____________________
5. ____________________
6. ____________________
7. ____________________
8. ____________________
9. ____________________
10. ____________________
11. ____________________
12. ____________________
13. ____________________
14. ____________________
15. ____________________
16. ____________________
17. ____________________
18. ____________________
19. ____________________
20. ____________________

Parts of the Digestive System


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

2. B. Give the function of each part of the digestive system by writing the name of the appropriate part in the blank space in front of each function. Each part will be used more than once.

Function

Example

mouth____ a. Receives food

____________ b. Completes digestion begun in stomach

____________ c. Absorbs water

____________ d. Secretes bile

____________ e. Churns food by contraction of muscles

____________ f. Grind, crush, shred, or tear food

____________ g. Speech

____________ h. Prepares food for digestion

____________ i. Dissolves food in mouth

____________ j. Secretes gastric juices

____________ k. Removes poisons absorbed from intestine

____________ l. Secretes pancreatic juice

____________ m. Manufactures insulin

____________ n. Stores and concentrates bile

____________ o. Eliminates wastes of digestion

Digestive Part

-mouth
-tongue
-teeth
-saliva
-stomach
-small intestine
-liver
-gall bladder
-pancreas
-large intestine

________________ p. Manufactures heparin

________________ q. Absorbs end products of digestion into blood and lymph

________________ r. Carries on limited absorption of water, alcohol, and some drugs

________________ s. **contains enzyme ptyalin**

________________ t. Secretes bile

________________ u. Ejects bile into duodenum as needed during digestion

________________ v. Contains the enzyme, ptyalin, which digests starch

________________ w. Contains taste buds, which identify sweet, salt, sour, and bitter tastes

________________ x. Metabolizes carbohydrates, proteins, and fats

________________ y. Stores iron, Vitamins A, B_{12}, and D

________________ z. Forms antibodies

3. The chart of digestive juices and enzymes has some lettered blank spaces. Place the correct answer in the following lettered spaces.

a.

b.

c.

d.

e.

f.

g.

h.

i.

j.

DIGESTIVE JUICES AND ENZYMES

Digestive juices and enzymes	Source	Place of Action	Action of enzyme or digestive juice
Saliva	Salivary glands	___a___	
Ptyalin			Begins starch digestion
Gastric juice	Stomach	Stomach	
Pepsin			Begins protein digestion
___b___			Emulsifies fats
Rennin (children)			___c___
Hydrochloric acid			Softens connective tissue in meat Kills some pathogenic bacteria Activates gastric enzymes
Pancreatic juice	___d___	Small intestine	
___e___			Acts on protein
Amylopsin			Acts on ___f___
Lipase			Acts on fats
Intestinal juice	Small intestine	Small intestine	
Enterokinase			Acts on ___g___
___h___			Changes sucrose to simple sugar
Lactase			Changes lactose to simple sugar
Maltase			Changes ___i___ to simple sugar
Bile	___j___	Small intestine	Emulsifies fats

4. Identify each of the following disorders of the digestive tract.

   a. Dental caries--

   b. Gingivitis--

   c. Pyorrhea--

   d. Stomatitis--

   e. Mumps--

   f. Flatulence--

   g. Gastritis--

   h. Heartburn--

   i. Nausea--

   j. Pyloric stenosis--

   k. Stomach cancer--

   l. Ulcer--

   m. Vomiting--

   n. Appendicitis--

   o. Constipation--

   p. Diarrhea--

q. Dysentery--

r. Diverticulitis--

s. Cirrhosis--

t. Hepatitis--

u. Cholecystitis--

v. Cholelithiasis--

w. Pancreatitis--

x. Diabetes--

5. Locate parts of the digestive system on a diagram
6. Identify enzymes
7. Recognize names of digestive disorders

(NOTE: If activities #5 - #7 have not been completed prior to the test, ask the instructor when they should be completed.)

UNIT X-C

THE DIGESTIVE SYSTEM

ANSWERS TO UNIT TEST

1. 14 a.
   10 b.
   11 c.
   15 d.
   1 e.
   3 f.
   7 g.
   12 h.
   16 i.
   8 j.
   2 k.
   13 l.
   9 m.
   4 n.
   6 o.
   5 p.

2. A.
   1. parotid gland
   2. sublingual gland
   3. submaxillary gland
   4. pharynx
   5. esophagus
   6. stomach
   7. pancreas
   8. duodenum
   9. transverse colon
   10. jejunum
   11. descending colon
   12. sigmoid colon
   13. rectum
   14. anus
   15. appendix
   16. cecum
   17. ileum
   18. ascending colon
   19. gall bladder
   20. liver

2. B.

a. mouth

b. small intestine

c. large intestine

d. liver

e. stomach

f. teeth

g. tongue

h. mouth

i. saliva

j. stomach

k. liver

l. pancreas

m. pancreas

n. gall bladder

o. large intestine

p. liver

q. small intestine

r. stomach

s. saliva

t. liver

u. gall bladder

v. saliva

w. tongue

x. liver

y. liver

z. liver

3.

1. mouth
2. lipase
3. curdles milk
4. pancreas
5. trypsin
6. starch
7. protein
8. sucrase
9. maltose
10. liver

4.

a. tooth decay

b. infection of gum

c. inflammation of tooth socket

d. infection of lining of mouth

e. viral infection of salivary glands

f. excessive amount of gas in stomach or intestine

g. inflammation of the lining of the stomach

h. burning sensation in cardiac portion of stomach

i. feeling of illness following distention or irritation of the stomach as a result of mechanical or nervous factors

j. abnormal constriction of the pyloric valve

k. malignant tumor of the lining of the stomach

l. an area of mucous membrane in which the tissues are gradually disintegrating

m. reverse peristalsis causing ejection of the stomach contents through the mouth

n. inflammation of the appendix

o. abnormal delay in, or infrequent bowel movements

p. abnormally frequent, watery, bowel movements

q. inflammation of mucosal lining of intestines

r. inflammation of the diverticuli (distended sacs) of the colon

s. chronic disease in which active liver cells are replaced by scar tissue

t. inflammation of the liver

u. inflammation of the gall bladder

v. presence of stones in the gall bladder

w. inflammation of the pancreas

x. disease in which sugar is not used by the cells because of a deficiency of insulin

5. Evaluated to the satisfaction of the instructor

6. Evaluated to the satisfaction of the instructor
7. Evaluated to the satisfaction of the instructor

UNIT X-D

*THE CIRCULATORY SYSTEM

UNIT OBJECTIVE

After completing this unit, the student will be able to identify, describe, and give the function of each part of the circulatory system. The student will also be able to name the components of blood and lymph, explain the importance of ABO and Rh blood groups, and identify common circulatory disorders. This knowledge will be evidenced through demonstration and by satisfactorily completing a unit test.

SPECIFIC OBJECTIVES

After completing this unit of instruction, the student will be able to:

1. Discuss the functions of blood
2. Describe the components of blood
3. Explain the determination of ABO blood types and give reasons for typing blood
4. Discuss the importance of the Rh factor
5. List in sequence the basic steps in the clotting of blood
6. Identify the parts of the heart in a diagram
7. Explain the conduction system of the heart
8. Define pulse and blood pressure
9. List types of blood vessels
10. Differentiate among pulmonary, systemic, and portal circulation
11. Discuss lymph, lymphatics, lymph nodes, and lymphatic tissues
12. Identify definitions of diseases and disorders of the circulatory system
13. Answer questions about compatibility of ABO blood groups

---

* Reprinted with permission of Occupational Curriculum Laboratory, East Texas State University from Anatomy and Physiology Health Occupations Education, 1978.

14. Label the parts of the diagram of the heart.
15. Trace the course of the blood through the heart.
16. Identify names of diseases and disorders of circulatory system included in puzzle.

UNIT X-D

THE CIRCULATORY SYSTEM

SUGGESTED ACTIVITIES

I. Instructor

- A. Provide objective sheet
- B. Discuss objective sheet
- C. Pass out information sheet
- D. Discuss information sheet
- E. Make and show transparencies
- F. Distribute and discuss assignment sheets
- G. Use model to point out parts of heart
- H. Give test and evaluate results

II. Student

- A. Read objective sheet
- B. Discuss objective sheet
- C. Read material contained in information sheet
- D. Discuss information sheet
- E. Complete assignment sheets
- F. Observe or participate in demonstration of parts of heart, using model
- G. Take test

INSTRUCTIONAL MATERIALS

I. Included in this unit:

- A. Objectives
- B. Information sheet
- C. Transparency masters

1. TM-1--Reactions of ABO Groups in Crossmatching Prior to Transfusion

2. TM-2--The Heart

D. Assignment Sheets

1. Assignment Sheet #1--Compatible ABO Blood Groups

2. Assignment Sheet #2--Diagram of Heart

3. Assignment Sheet #3--The Course of Blood Through the Heart

4. Assignment Sheet #4--Scrambled Letter Puzzle

E. Answers to assignment sheets

F. Test

G. Answers to test

II. References

A. Books

1. Anderson, Paul D. Clinical Anatomy and Physiology for Allied Health Sciences. Philadelphia, Pennsylvania: W.B. Saunders, 1976.

2. Anthony, Catherine Parker and Irene B. Alyn. Structure and Function of the Body. 5th ed. St. Louis, Missouri: C.V. Mosby Company, 1976.

3. Anthony, Catherine Parker and Norma Jane Kolthoff. Textbook of Anatomy and Physiology. 9th ed. St. Louis, Missouri, C.V. Mosby Company, 1975.

4. Jacob, Stanley W. and Clarice Ashworth Francone. Structure and Function in Man. 3rd ed. Philadelphia, Pennsylvania: W.B. Saunders Company, 1974.

5. Jorow, Marie. The Central Service Technician at Work. New York, New York: Springer Publishing Company, 1975.

6. Memmler, Ruth Lundeen and Dena Lin Wood. The Human Body in Health and Disease. 4th ed. Philadelphia, Pennsylvania: J.B. Lippincott Company, 1977.

UNIT X-D

THE CIRCULATORY SYSTEM

INFORMATION SHEET

I. Functions of blood

  A. Transportation

    1. Blood carries oxygen and nutrients from digestive and respiratory systems, and delivers them to each cell.

    2. From cells, blood transports waste products of metabolism to excretory organs

      a. carbon dioxide from cells to lungs

      b. waste to kidneys

    3. Transports hormones from endocrine glands to cells and tissues

    4. Helps regulate and equalize body temperature by distributing heat to body parts.

  B. Defense against disease

    1. White blood cells combat bacterial invasion

    2. Antibodies

II. Components of blood

  A. Plasma--liquid part of blood

    1. Water

    2. Proteins

      a. Albumins

      b. Globulins

      c. Fibrinogen

    3. Food substances as glucose, amino acids, lipids

    4. Compounds formed by metabolism, as urea, uric acid, creatinine, and lactic acid

5. Respiratory gases as carbon dioxide and oxygen
6. Regulatory substances as hormones and enzymes

B. Formed elements

1. Erythrocytes (red blood cells)
    - a. Characteristics
        1. Biconcave disc shape
        2. Non-nucleated
        3. 4,500,000-5,000,000/per cu. mm of blood
        4. 7 microns in diameter
        5. Contain hemoglobin, a blood protein
        6. Formed in red bone marrow
    - b. Functions
        1. Transport oxygen from lungs to each cell in the body
        2. Transport carbon dioxide from tissues back to lungs for expiration
2. Leucocytes (white blood cells)
    - a. Nucleated
    - b. 5,000-10,000/cu. mm. of blood
    - c. Capable of amoeboid motion
    - d. Types
        1. Granulocytes--cytoplasm contains granules.
            - a) Formed in bone marrow
            - b) Types are neutrophiles, eosinophiles, and basophiles
        2. Agranulocytes--lack granules in cytoplasm
            - a) Formed in bone marrow, lymph glands and lymphatic tissue

b) Types are monocytes and lymphocytes

c) Functions:

1) Destroy invading bacteria

2) Lymphocytes play an important role in the development of immunity

3. Platelets (thrombocytes)

a. Small fragments of specialized bone marrow cells

b. 150,000 to 300,000/cu. mm. of blood

c. Capable of ameboid motion

d. Required for clotting of blood

III. ABO Blood types-- based on presence of antigen on surface membrane of red blood cells and corresponding antibodies in blood serum

A.		Antigen on rbc	Antibody in serum
1.	Type A	A	anti-B
2.	Type B	B	anti-A
3.	Type O	no antigen present	anti B & anti A
4.	Type AB	A&B	neither anti-B nor anti-A

B. Importance of ABO blood type determination

1. Transfusion of imcompatible blood causes agglutination of red blood cells with severe reaction or death of recipients.

2. Medical-legal identification

IV. Rh factor--protein factor on red blood cells

A. Rh positive blood means Rh antigen is present on red blood cells.

B. Rh negative blood means no Rh antigen is present on red blood cells.

1. Possible problems encountered by Rh negative patients
    a. Transfusion--Rh negative patient transfused with Rh positive blood may develop Rh antibodies. If subsequent transfusions of Rh positive blood are given, an antigen-antibody reaction may occur.
    b. Pregnancy
        1. An Rh negative mother pregnant with an Rh positive baby may form Rh positive antibodies.
        2. Subsequent pregnancy with Rh positive baby may result in an antigen-antibody reaction.
2. RhoGAM--a commercially prepared serum is used to prevent maternal antibody production

V. Blood coagulation--prevents blood loss when a blood vessel is ruptured by injury.

A. Injured tissues release thromboplastin, which triggers the clotting mechanism.

B. Thromboplastin reacts with certain protein factors and calcium ions to form a prothrombin activator. This reacts with calcium ions to convert prothrombin to thrombin.

C. Thrombin converts soluble fibrinogen to insoluble fibrin--which forms network that traps red blood cells forming a clot.

VI. Heart structure and function

A. Layers of heart

1. Endocardium--lining of interior of heart
2. Myocardium--muscle of the heart
3. Pericardium--outer covering of the heart

B. Cavities of heart

1. Septum--muscular partition separating the right and left sides of the heart
2. Right atrium--upper chamber of heart which

receives venous blood returning to heart from body tissues

3. Right ventricle--lower chamber which receives blood from right atrium, then sends blood to lungs

4. Left atrium--receives blood high in oxygen content from the lungs

5. Left ventricle--receives blood from left auricle, pumps oxygenated blood to body

C. Valves of heart--prevent backward flow of blood

1. Tricuspid--valve between right atrium and right ventricle

2. Pulmonary semilunar--valve between right ventricle and pulmonary artery

3. Mitral--valve between left atrium and left ventricle

4. Aortic semilunar--valve between left ventricle and aorta

D. Function of heart

1. Pumps blood in sufficient amounts to meet the needs of the cells

2. The atria contract, forcing blood into ventricles.

3. At the end of atrial contraction, the ventricles contract, forcing the blood out of the ventricles.

4. Blood from right ventricle is forced into the pulmonary artery. Blood from the left ventricle is forced into the aorta.

VII. Conduction system--composed of cardiac muscle modified to conduct impulses

A. Sinoatrial node (pacemaker)--located in the upper wall of right atrium, initiates heartbeat and sets its pace.

B. Impulses travel through the muscle fibers of both atria causing them to contract.

C. The atrioventricular node located in lower part of right atrial wall is stimulated next, the impulse is transmitted to bundle of His, and spreads to all parts of ventricle walls.

D. Ventricles contract forcing blood from heart.

VIII. Pulse and blood pressure

A. Pulse is the waves of increased pressure in arteries as a result of ventricular contraction. (alternate expansion and recoil of an artery)

1. Pressure point--points where pressure may be applied to stop arterial bleeding. Points where pulse may be felt. Point where artery lies near surface, and near a bone that can act as a firm background for pressure.

2. Factors that influence pulse rate

a. Body size

b. Muscular activity

c. Emotional disturbances

d. Infections

e. Excessive secretion from thyroid

B. Blood pressure--pressure blood exerts on inside of walls of blood vessels

1. Systolic--pressure during heart muscle contraction

2. Diastolic--pressure which occurs during relaxation of heart muscle

IX. Blood Vessels

A. Types

1. Arteries--carry blood from heart to body

2. Veins--carry blood from body parts to heart

3. Capillaries--microscopic vessels that connect arteries and veins

X. Pulmonary, systemic and portal systems

A. Pulmonary circulation--the pulmonary artery carries blood containing carbon dioxide from the heart to the lungs. Oxygenated blood is returned to the heart from the lungs by the pulmonary vein.

B. Systemic circulation--arteries and veins carry oxygen and nutrients to all tissue of body except the lungs and carry waste materials for disposal from all tissues except the lungs.

C. Portal circulation--blood from abdominal organs passes through the liver. Substances in blood are processed by the liver.

XI. The lymphatic system

A. Lymph-- is clear, watery fluid found in lymphatic vessels. It closely resembles blood plasma, but contains a lower percentage of protein.

B. Lymphatics--vessels that contain lymph.

1. Lymphatics originate as capillaries in tissue spaces. Capillaries drain into lymph vessels.

C. Lymph nodes--small masses of lymphatic tissue

1. Located throughout body along lymph vessels. They also occur in clusters in some areas of the body as cervical, inguinal, axillary, mesenteric, and tracheo-bronchial regions.

2. Filter injurious substances from blood and phagocytize them.

3. Lymphocytes and monocytes are formed in lymph nodes.

D. Lymphatic tissues

1. Tonsils--protect entrance to alimentary and respiratory tracts from bacterial invasion.

2. Thymus

a. Located superiorally in chest between aorta and sternum.

b. Larger in young children--gradually atrophies.

c. Produces lymphocytes and antibodies.

3. Spleen

    a. Located left hypochondrium

    b. Serves as blood reservoir

    c. Produces antibodies

    d. Produces red blood cells

    e. Destroys effete blood cells

XII. Diseases and disorders of the circulatory system

A. Anemia--general condition in which the blood is deficient in the number of red blood cells or in hemoglobin

B. Aneurysm--abnormal dilatation of blood vessels

C. Angina pectoris--severe chest pain

D. Arteriosclerosis--thickening, hardening, and loss of elasticity of walls of blood vessels, especially arteries

E. Atherosclerosis--a disorder of the lining of arteries in which fat is deposited forming plaques that diminish the width of the vessel

F. Coronary occlusion--closing off of a coronary artery

G. Coronary thrombosis--closing of the coronary artery by a blood clot

H. Embolus--a blood clot or foreign material carried by the blood stream into a small vessel causing its obstruction

I. Endocarditis--inflammation of the lining of the heart

J. Gangrene--death of tissue due to lack of blood supply, usually accompanied by bacterial invasion

K. Hemorrhage--copius bleeding

L. Hypertension--high blood pressure

M. Ischemia--insufficient blood supply to a given part of the body

N. Murmur--abnormal heart sound

O. Pericarditis--inflammation of the pericardium

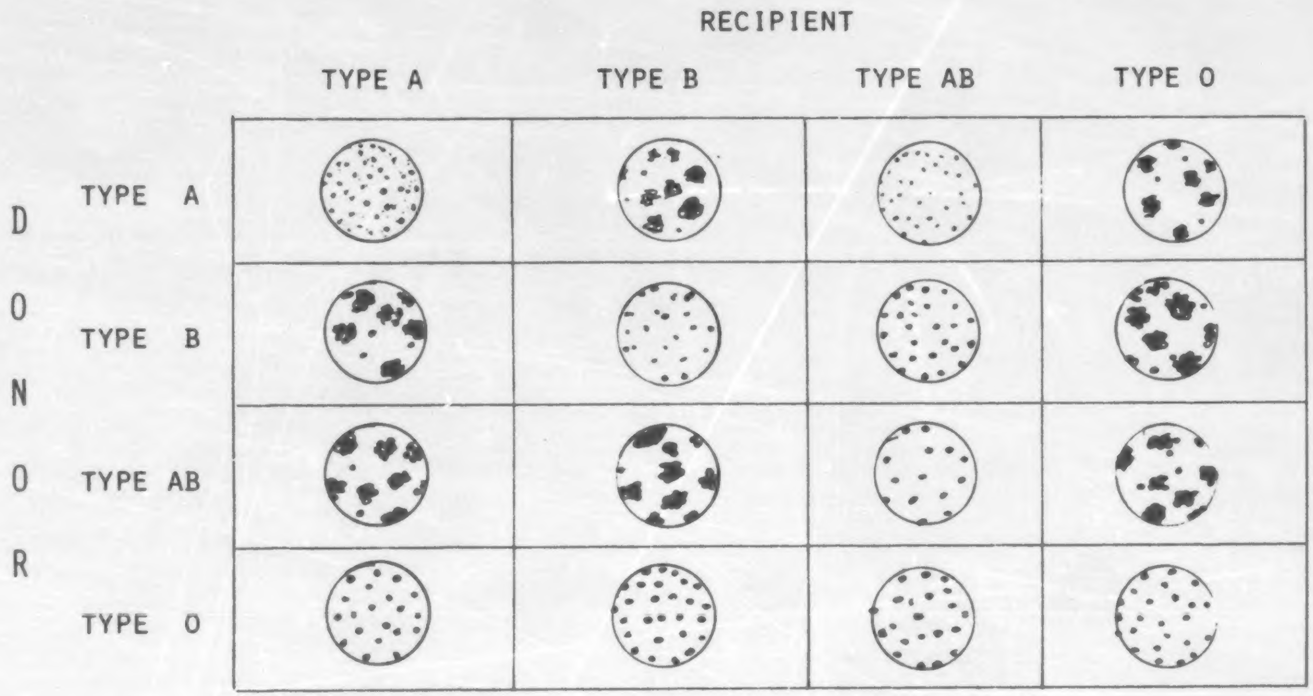
P. Phlebitis--inflammation of a vein

Q. Rheumatic fever--disease in which the joints and the heart may become involved as a result of streptococcal infection

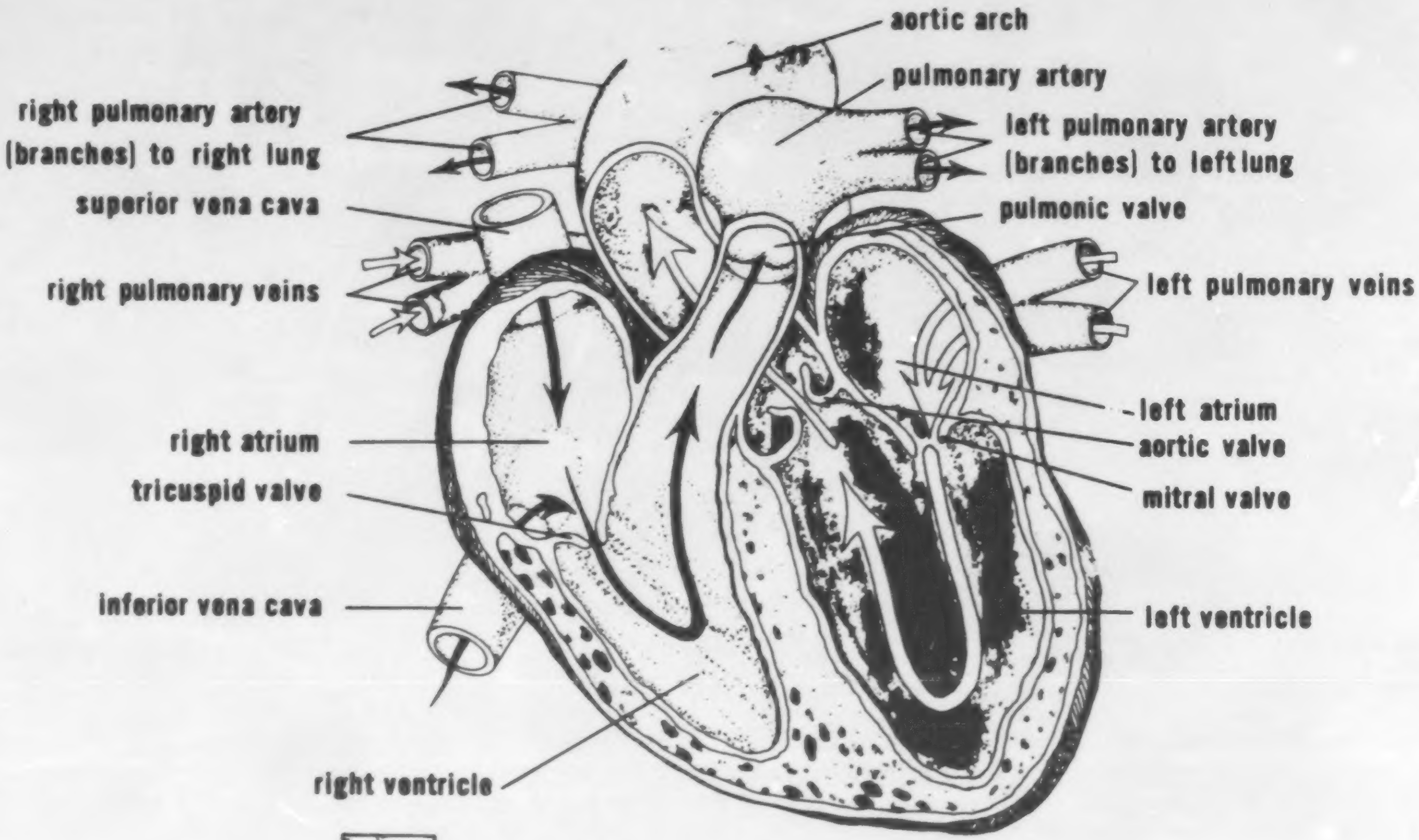
R. Thrombus--blood clot

S. Varicose veins--dilatation of veins, usually in lower extremities

REACTIONS OF ABO BLOOD GROUPS IN CROSSMATCHING PRIOR TO TRANSFUSION


RECIPIENT
TYPE A
TYPE B
TYPE AB
TYPE O
DONOR
TYPE A
TYPE B
TYPE AB
TYPE O

THE HEART


aortic arch
pulmonary artery
right pulmonary artery (branches) to right lung
left pulmonary artery (branches) to left lung
superior vena cava
pulmonic valve
right pulmonary veins
left pulmonary veins
left atrium
right atrium
aortic valve
tricuspid valve
mitral valve
inferior vena cava
left ventricle
right ventricle

▢ Blood low in oxygen (venous)

▨ Blood high in oxygen (arterial)

TM-2

X-D-16

UNIT X-D

THE CIRCULATORY SYSTEM

ASSIGNMENT SHEET #1--COMPATIBLE ABO BLOOD GROUPS

Directions: Answer the following questions by referring to the chart.

	Recipient			
	Type A	Type B	Type AB	Type O
Type A	-	+	-	+
Type B	+	-	-	+
Type AB	+	+	-	+
Type O	-	-	-	-

+ = agglutination

- = no agglutination

1. What types of blood could be given to a Type A recipient? ________________
2. What types of blood may not be given to a Type B recipient? ________________
3. What types of blood may be given a Type O recipient? ____________________
4. what types of blood may be given a Type AB recipient? ____________________
5. What types of blood may be given to a Type B recipient? ____________________

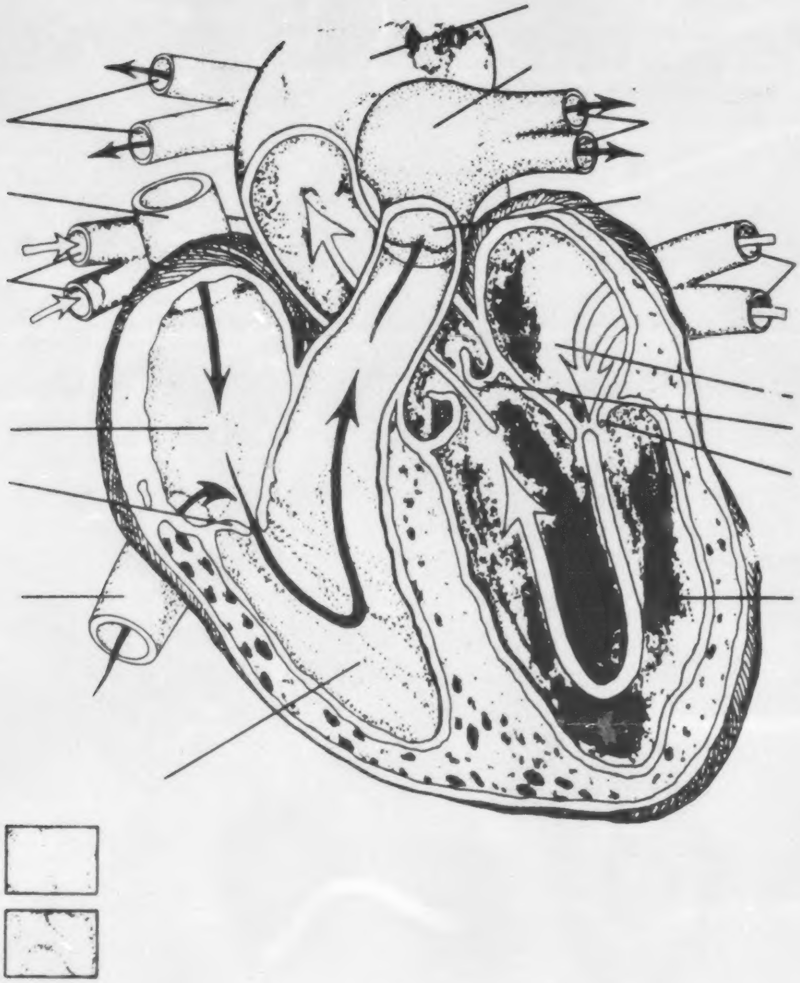
UNIT X-D

THE CIRCULATORY SYSTEM

ASSIGNMENT SHEET #2--DIAGRAM OF HEART

Directions: Label the parts of the diagram of the heart.

THE HEART



UNIT X-D

THE CIRCULATORY SYSTEM

ASSIGNMENT SHEET #3--COURSE OF BLOOD THROUGH THE HEART

Directions: Trace the course of the blood through the heart by filling in the blanks in the following paragraph with the name of the appropriate chamber or valve.

The blood returns to the heart by means of the superior and inferior vena cava. It enters the (1) ________________, passes through the (2) ________________ valve to the (3) __________________. It flows through the (4) ___________ valve, thence through the pulmonary arteries to the lungs where the blood loses carbon dioxide and gets a supply of oxygen. The oxygenated blood returns to the heart by means of the pulmonary vein, enters the (5) _____________ of the heart. Then it flows through the (6) _____________ valve to the (7) ________________. Finally, the blood passes through the (8) ___________ valve to the aorta and thence to the body.

UNIT X-D

THE CIRCULATORY SYSTEM

ASSIGNMENT SHEET #4--SCRAMBLED LETTER PUZZLE

Directions: Unscramble the letters below to form the names of disorders of the circulatory system which are defined below.

1. ysmeuran _ _ _ _ _ _ _ _ _
2. starreiclosieosr _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
3. sidendarcoti _ _ _ _ _ _ _ _ _ _ _ _ _
4. engregan _ _ _ _ _ _ _ _ _
5. subrtomh _ _ _ _ _ _ _ _ _ _
6. biplheist _ _ _ _ _ _ _ _ _ _
7. rmuumr _ _ _ _ _ _
8. chismaie _ _ _ _ _ _ _ _ _
9. ghoremrhae _ _ _ _ _ _ _ _ _ _ _
10. tnpesniorhye _ _ _ _ _ _ _ _ _ _ _ _ _

1. abnormal dilatation of a blood vessel
2. thickening, hardening, and loss of elasticity of blood vessels, especially arteries
3. inflammation of the lining of the heart
4. death of tissue due to lack of blood supply, usually accompanied by bacterial invasion
5. a blood clot
6. inflammation of a vein
7. abnormal heart sound
8. insufficient blood supply to a given part of the body
9. copius bleeding
10. high blood pressure

UNIT X-D

THE CIRCULATORY SYSTEM

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

1. Types A, O*
2. Types A, AB*
3. Type O
4. Type A*, B*, AB, O*
5. Type B, O*

*In actual practice blood is usually given only to recipients of same type as donors.

Assignment Sheet #2

Labeled diagram of heart

Assignment Sheet #3

(1) Right atrium

(2) Tricuspid

(3) Right ventricle

(4) Pulmonary

(5) Left atrium

(6) Mitral (bicuspid)

(7) Left ventricle

(8) Aortic

Assignment Sheet #4

1. aneurysm
2. arteriosclerosis
3. endocarditis
4. gangrene

5. thrombus
6. phlebitis
7. murmur
8. ischemia
9. hemorrhage
10. hypertension

UNIT X-D

THE CIRCULATORY SYSTEM

UNIT TEST

1. Discuss the functions of blood.

2. Describe the components of blood.

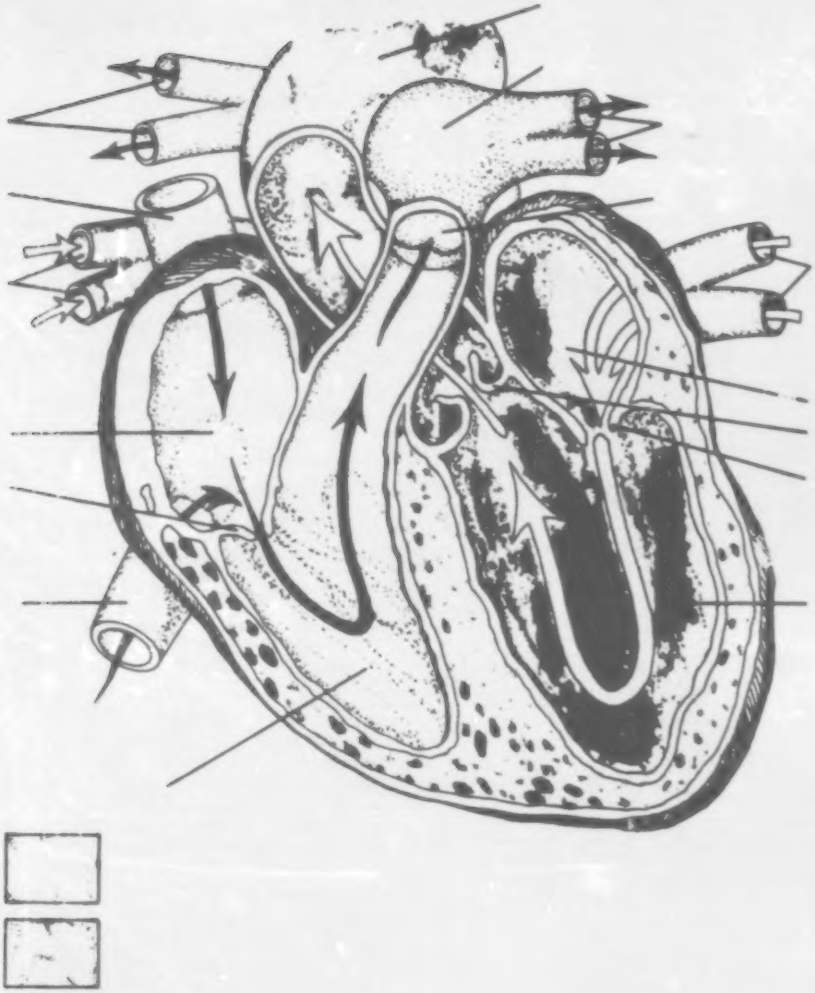
3. Explain the determination of ABO blood types and give reasons for typing blood.

4. Discuss the importance of the Rh factor.

5. List in sequence the basic steps in the clotting of blood.

6. Identify the parts of the heart on a diagram.

THE HEART



7. Explain the conduction system of the heart.

8. Define:

   a. pulse--

   b. blood pressure--

9. List the types of blood vessels.

10. Differentiate among pulmonary, systemic, and portal circulation.

11. Discuss lymph, lymphatics, lymph nodes, and lymphatic tissues.

12. Complete the following statements using the diseases and disorders of the circulatory system listed below.

anemia
aneurysm
angina pectoris
arteriosclerosis
atherosclerosis
coronary occlusion
coronary thrombosis
embolus
endocarditis
gangrene
hemorrhage
hypertension
ischemia
murmur
pericarditis
phlebitis
rheumatic fever
thrombus
varicose veins

A. Inflammation of a vein ____________ 1.

B. Copius bleeding ____________ 2.

C. Abnormal heart sound ____________ 3.

D. Closing off of a coronary artery ____________ 4.

E. Thickening, hardening, and loss of elasticity of walls of blood vessels, especially arteries ____________ 5.

F. Inflammation of the lining of the heart ____________ 6.

G. A blood clot or foreign material carried by the blood stream into a small vessel causing its obstruction ____________ 7.

H. Death of tissue due to lack of blood supply, usually accompanied by bacterial invasion ____________ 8.

I. Dilatation of veins, usually in lower extremities ____________ 9.

J. Insufficient blood supply to a given part of the body ____________ 10.

K. High blood pressure ____________ 11.

L. A disorder of the lining of the arteries in which fat is deposited forming plaques that diminish the width of the vessel ____________ 12.

M. Closing of the coronary artery by a blood clot ____________ 13.

N. General condition in which the blood is deficient in the number of red blood cells or in hemoglobin ____________ 14.

O. Severe chest pain ____________ 15.

P. Disease in which the joints and the heart may become involved as a result of streptococcal infection ____________ 16.

Q. Abnormal dilatation of the blood vessels ____________ 17.

R. Inflammation of the pericardium ____________ 18.

S. Blood clot ____________ 19.

13. Answer questions about compatibility of ABO blood groups.

14. Label the parts of the diagram of the heart.

15. Trace the course of the blood through the heart.

16. Identify names of diseases and disorders of the circulatory system in puzzle.

NOTE: (If activities #13-#16 have not been completed prior to the test, ask your instructor when they should be completed.)

UNIT X-D

THE CIRCULATORY SYSTEM

ANSWERS TO UNIT TEST

1. a. Transportation

   (1) Blood carries oxygen and nutrients from the digestive and respiratory systems and delivers them to each cell.

   (2) From cells, the blood transports the waste products of metabolism to the excretory organs. Carbon dioxide is taken from the cells to the lungs. Other wastes are taken from the cells to the kidneys.

   (3) Blood transports hormones from endocrine glands to cells and tissues.

   (4) Helps regulate and equalize body temperature by distributing heat to body parts.

   b. Defense against disease

   (1) White blood cells

   (2) Antibodies

2. a. Plasma--the liquid part of blood. Composed of water and proteins, albumin, globulin, and fibrinogen. Plasma contains the following substances:

   (1) Food substances as glucose, amino acids, and lipids

   (2) Compounds formed by metabolism, as urea, uric acid, creatinine, and lactic acid

   (3) Respiratory gases as carbon dioxide and oxygen

   (4) Regulatory substances as hormones and enzymes

   b. Formed elements

   (1) Erythrocytes (red blood cells)

   a) Biconcave disc shape

   b) Non-nucleated

   c) 4,500,000-5,000,000 per cu. mm of blood

d) 7 microns in diameter

e) Contain hemoglobin-a blood protein

f) Formed in red bone marrow

g) Transport oxygen from lungs to body cells and carbon dioxide from cells to lungs

(2) Leucocytes (white blood cells)

a) Nucleated

b) 5,000-10,000/cu. mm of blood

c) Capable of ameboid motion

d) Granulocytes-cytoplasm of cells contains granules

1) Formed in bone marrow

2) Types are neutrophiles, eosinophiles, and basophiles

e) Agranulocytes--lack granules in cytoplasm

1) Formed in bone marrow, lymph glands, or lymphatic tissue

2) Types are monocytes and lymphocytes

f) Functions

1) Destroy invading bacteria

2) Lymphocytes play an important role in the development of immunity

(3) Platelets (thrombocytes)

a) Small fragments of specialized bone marrow cells

b) 150,000-300,000/cu. mm of blood

c) Capable of ameboid motion

d) Required for clotting of blood

3. ABO blood types are based on the presence or absence of antigen on the surface membrane of red blood cells, and the presence or absence of corresponding antibodies in blood serum.

	Antigen on red blood cell	Antibody in serum
Type A	A	anti-B
Type B	B	anti-A
Type O	no antigen present	anti-B and anti-A
Type AB	A&B	neither anti-B nor anti-A

Blood typing is used in medical-legal identification.

4. Rh positive blood means that the Rh antigen is present on red blood cells.

   Rh negative means no Rh antigen is present on red blood cells.

   The Rh factor may be of importance when an Rh negative patient is transfused with Rh positive blood, because the patient may produce Rh positive antibodies. If a subsequent transfusion of Rh positive blood is given, an antigen-antibody reaction may occur.

   In pregnancy, an Rh negative mother with an Rh positive baby may form Rh positive antibodies. A subsequent pregnancy with Rh positive baby may result in an antigen-antibody reaction.

   RhoGAM, a commercially prepared serum is used to prevent maternal antibody production.

5. a. Injured tissues release thromboplastin which triggers the clotting mechanism.

   b. Thromboplastin reacts with certain protein factors and calcium ions to form prothrombin activator. This reacts with calcium ions to convert prothrombin to thrombin.

   c. Thrombin converts soluble fibrinogen to insoluble fibrin, which forms a network that traps red blood cells forming a clot.

6. See Transparency Master TM-2

7. a. The sinoatrial node (pacemaker), located in the upper wall of the right atrium, initiates the heartbeat and sets its pace.

   b. Impulses travel through the muscle fibers of both atria causing them to contract.

   c. The atrioventricular node, located in the lower part of the right atrial wall, is stimulated next, the impulse is transmitted to the bundle of His, and spreads to all parts of ventricle walls.

   d. Ventricles contract forcing blood from the heart.

8. a. Pulse is the wave of increased pressure in arteries as a result of ventricular contraction.

   b. Blood pressure is pressure blood exerts on the inside walls of blood vessels.

9. a. Arteries

   b. Veins

   c. Capillaries

10. a. Pulmonary circulation--the pulmonary artery carries blood containing carbon dioxide from the heart to the lungs. Oxygenated blood is returned to the heart from the lungs by the pulmonary vein.

    b. Systemic circulation--arteries and veins carry oxygen and nutrients to all tissues of the body except the lungs, and carry waste materials for disposal from all tissues except the lungs.

    c. Portal circulation--blood from abdominal organs passes through the liver. Substances in the blood are processed by the liver.

11. Lymph--clear, watery fluid found in lymphatic vessels. It contains less protein than blood plasma.

    Lymphatics--vessels that contain lymph

    Lymph nodes--small masses of lymphatic tissue located throughout the body along lymph vessels. They filter injurious substances from the blood and phagocytize them. Lymphocytes and monocytes are formed in lymph nodes.

    Lymphatic tissues:

tonsils--which protect the entrance to alimentary and respiratory tracts from bacterial invasion

thymus--which is located superiorly in the chest between the aorta and the sternum. Lymphocytes and antibodies are produced in the thymus.

spleen--which is located in the left hypochondriac region. The spleen serves as a blood reservoir, produces antibodies, produces blood cells, and destroys worn-out red blood cells and platelets by phagocytosis.

12. a. phlebitis
    b. hemorrhage
    c. murmur
    d. coronary occlusion
    e. arteriosclerosis
    f. endocarditis
    g. embolus
    h. gangrene
    i. varicose veins
    j. ischemia
    k. hypertension
    l. atherosclerosis
    m. coronary thrombosis
    n. anemia
    o. angina pectoris
    p. rheumatic fever
    q. aneurysm
    r. pericarditis
    s. thrombus

13. Evaluated to the satisfaction of the instructor.

14. Evaluated to the satisfaction of the instructor.

15. Evaluated to the satisfaction of the instructor.

16. Evaluated to the satisfaction of the instructor.

UNIT X-E

*THE RESPIRATORY SYSTEM

UNIT OBJECTIVE

After completing this unit, the student will be able to identify terms and names of diseases of the respiratory system. The student will also be able to locate and give the function of the parts of the respiratory system, and to relate the concept of diffusion to actual gas exchange. The student will explain the mechanics and control of respiration. This knowledge will be evidenced through demonstration and by satisfactory completion of a unit test.

SPECIFIC OBJECTIVES

After completing this unit of instruction, the student will be able to:

1. Match terms to definitions
2. List the parts of the respiratory system and give their location and function
3. Identify terms pertaining to types of abnormal breathing
4. Explain the mechanics of breathing
5. Discuss the control respiration
6. Explain the mechanism of oxygen and carbon dioxide exchange
7. Identify respiratory diseases
8. Label a diagram of parts of respiratory system
9. Label diagram of diffusion of gases
10. Complete outline of functions of some respiratory parts
11. Determine the relationships between carbon dioxide content of the blood and the rate and depth of respiration

---

*Reprinted with permission of Occupational Curriculum Laboratory, East Texas State University from Anatomy and Physiology Health Occupations Education, 1978.

UNIT X-E

THE RESPIRATORY SYSTEM

SUGGESTED ACTIVITIES

I. Instructor

   A. Provide objective sheet

   B. Discuss objective sheet

   C. Pass out information sheet

   D. Discuss information sheet

   E. Make and show transparencies

   F. Distribute and discuss assignment sheets

   G. Use model of human torso to point out parts of the respiratory system

   H. Give test and evaluate results

II. Student

   A. Read objective sheet

   B. Discuss objective sheet

   C. Read information sheet

   D. Discuss information sheet

   E. Complete assignment sheets

   F. Observe or participate in demonstration of parts of respiratory system using model

   G. Take test

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objective sheet

   B. Information sheet

C. Transparency masters

1. TM-1--Parts of Respiratory System

2. TM-2--Diffusion of gases

D. Assignment sheets

1. Assignment Sheet #1--Diagram of Parts of Respiratory System

2. Assignment Sheet #2--Diagram of Diffusion of Gases

3. Assignment Sheet #3--Outline of Function of Some Respiratory Parts

4. Assignment Sheet #4--Relationship Between Carbon Dioxide Content of Blood and Rate and Depth of Respiration

E. Answers to assignment sheets

F. Test

G. Answers to test

II. References

A. Books

1. Anderson, Paul D. Clinical Anatomy and Physiology for Allied Health Sciences. Philadelphia, Pennsylvania: W.B. Saunders, 1976.

2. Anthony, Catherine Parker, and Irene B. Alyn. Structure and Function of the Body. 5th ed. St. Louis, Missouri: C.V. Mosby Company, 1976.

3. Jacob, Stanley W., and Clarice Ashworth Francone. Structure and Function in Man. 3rd ed. Philadelphia, Pennsylvania: W.B. Saunders Company, 1974.

4. Memmler, Ruth Lundeen, and Dena Lin Wood. The Human Body in Health and Disease. 4th ed. Philadelphia, Pennsylvania: J.B. Lippincott Company, 1977.

UNIT X-E

THE RESPIRATORY SYSTEM

INFORMATION SHEET

I. Terms and definitions

  A. Breathing--inhaling and exhaling air

  B. Cellular respiration--union of oxygen and digested food in the cell with the release of energy

  C. Cyanosis--bluish color of skin caused by oxygen deficiency in the blood

  D. Diffusion--moving of molecules from a region of higher concentration to a region of lower concentration of molecules

  E. Epistaxis--nose bleed

  F. Eupnea--normal respiration

  G. Exhalation--expulsion of air from alveoli of lungs

  H. External respiration--exchange of oxygen and carbon dioxide in the lungs

  I. Inhalation--phase during which air is drawn into the lungs

  J. Internal respiration--exchange of carbon dioxide and oxygen in body cells

II. Organs of respiration

  A. Nose (nostrils)--air enters respiratory system through nostrils

    1. Filter air by means of hairs in nostrils

    2. Trap bacteria and debris on mucosal surface

    3. Warm air prior to entry into pharynx

  B. Paranasal sinuses--cavities in bones of skull which open into the nasal cavity

1. Reduce overall weight of skull
2. Provide mucus for nasal cavity
3. Enhance resonance of voice

C. Pharynx--extends from mouth to esophagus

1. Provides passageway for food and air
2. Aids in forming vowel sounds

D. Larynx--at upper end of trachea just below the pharynx

1. Protects airway from entrance of solids or liquids during swallowing
2. Contains vocal cords which function in speech production
    a. Glottis--opening into larynx
    b. Epiglottis--structure that covers the glottis during swallowing and thus prevents food or liquid from entering the airway

E. Trachea--tube 4 1/2 inches long extending from larynx to bronchi

1. "C"-shaped cartilage rings provide firmness to soft tissue of trachea and thus prevent collapse of airway
2. Provides passageway for inhaled and exhaled air

F. Bronchi--trachea divides at lower end to form bronchi, which lead from trachea to each lung

1. Bronchi branch to form secondary bonchi
2. Bronchioles are branches of secondary bronchi
3. Alveolar ducts are branches of bronchioles which lead to alveoli

G. Lungs--pair of lobed organs in chest cavity, extending from diaphragm to clavicle

1. Alveoli--tiny air sacs that actually make up the lungs
2. Actual exchange of oxygen and carbon dioxide takes place through the walls of the alveoli

H. Diaphragm

1. Separates abdominal and chest cavities
2. Contraction of the diaphragm causes air to enter the lungs

I. Pleura--Serous membrane that covers the lungs and also lines the chest cavity

III. Types of abnormal respiration

A. Hyperpnea--abnormally increased breathing

B. Apnea--cessation of breathing

C. Cheyne-Stokes respiration--respirations gradually increase in rapidity and volume until they reach climax, then gradually subside, cease entirely for a few seconds, then begin cycle again

D. Anoxia--lack of oxygen

E. Asphyxia--an oxygen deficiency with a resulting increase of carbon dioxide in the tissues

IV. Mechanics of respiration

A. Diaphragm and intercostal muscles contract enlarging chest cavity; air rushes in to fill lungs

B. Diaphragm and intercostal muscles relax; air is pushed out of lungs by the elastic recoil of chest and lungs

V. Control of respiration

A. Medulla and pons of brain control inhalation and expiration

B. Increased carbon dioxide level in the blood stimulates breathing

C. Increased ventilation permits loss of carbon dioxide from the blood and decrease in rate of breathing

D. Other factors that may be involved in control of respiration are age, sensory stimuli, blood pressure, or shock.

VI. Mechanism of oxygen and carbon dioxide exchange

A. Diffusion is the movement of molecules from region of higher concentration to a region of lower concentration of molecules.

B. Oxygen enters the alveoli of the lung as air is brought in by inhalation. Thus the concentration of oxygen in the alveoli is greater than in the blood in the surrounding capillaries.

C. Oxygen moves from the alveoli to the blood in the capillaries through alveolar and capillary walls. The oxygenated blood moves through the body by means of the arterial system.

D. If the oxygen concentration in the blood is greater than the oxygen concentration in the cells, oxygen molecules move from blood to body cells.

E. Cellular respiration is the combination of oxygen with digested food with the release of energy. Carbon dioxide and water are given off as waste. $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O\uparrow$

F. Carbon dioxide produced in cellular respiration diffuses from cells to venous blood, returns to alveoli, and is exhaled.

G. The purpose of external and internal respiration is to provide oxygen for cellular respiration and a means of disposal of waste carbon dioxide

VII. Diseases and disorders of respiratory system

A. Asthma--allergic reaction characterized by localized swelling in walls of small bronchioles with secretion of thick mucus and spasm of the smooth muscle walls of the bonchioles

B. Atelectasis--collapse of part or all of a lung with incomplete expansion of the alveoli.

C. Bronchiectasis--dilation of bronchi with cough, voluminous sputum, and labored respiration on exertion.

D. Cancer of lung--factors most frequently mentioned as possible causes are the presence of foreign particles and irritants in the air and smoking cigarettes and cigars

E. Common cold--most widespread of all communicable diseases, characterized by swollen and inflamed mucous membrane of nose and throat with copious discharge

F. Cough--mechanism for clearing obstructions from airway

G. Emphysema--distention of alveoli due to chronic bronchial obstruction

H. Epistaxis--nose bleed

I. Hay fever--sensitivity to foreign proteins causing watery discharge from eyes and nose

J. Influenza--acute, contagious disease characterized by inflammation of the upper respiratory tract and generalized aches and pains

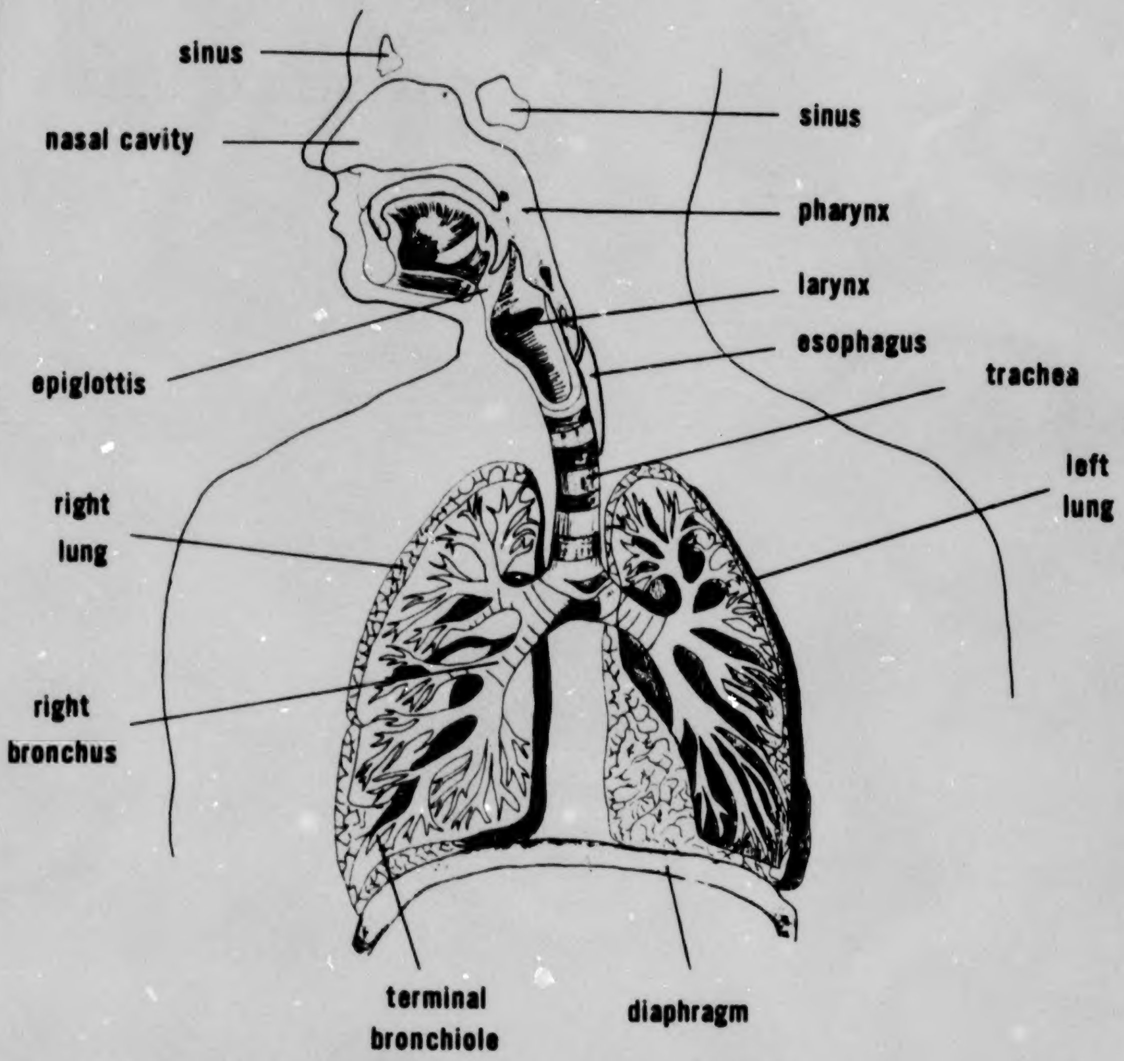
K. Pleurisy--inflammation of the pleura, usually accompanies infections of the lung

L. Pneumonia--inflammation of the alveoli of the lung, may be caused by bacteria or viruses

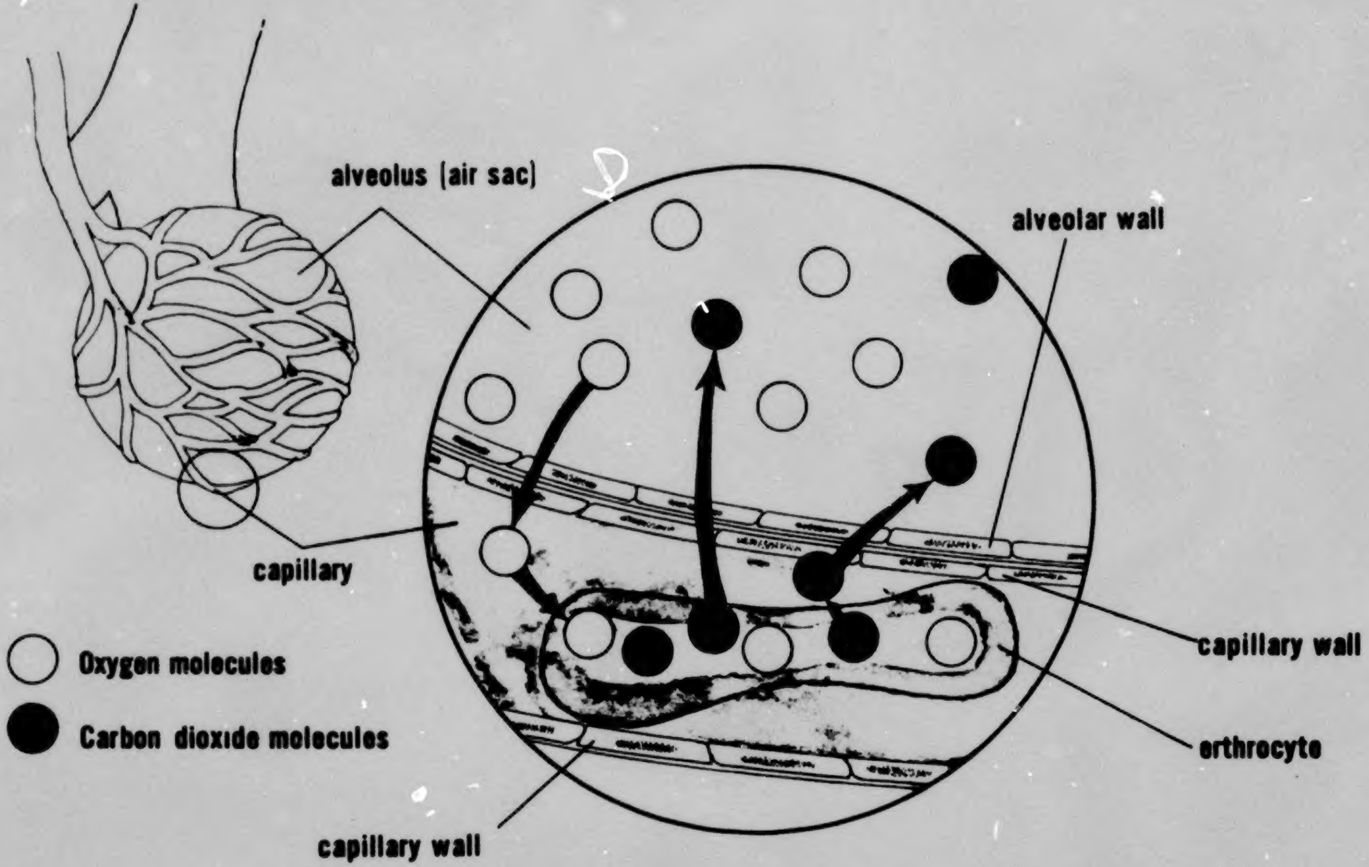
M. Sinusitis--inflammation of a sinus

N. Tuberculosis--inflammation of lungs and pleurae, caused by bacterium. (Occasionally invades other parts of the body)

PARTS OF THE RESPIRATORY SYSTEM


sinus
nasal cavity
sinus
pharynx
larynx
esophagus
epiglottis
trachea
left lung
right lung
right bronchus
terminal bronchiole
diaphragm

DIFFUSION OF GASES


alveolus (air sac)
alveolar wall
capillary
capillary wall
erthrocyte
capillary wall
○ Oxygen molecules
● Carbon dioxide molecules

TM-2

X-E-10

UNIT X-E

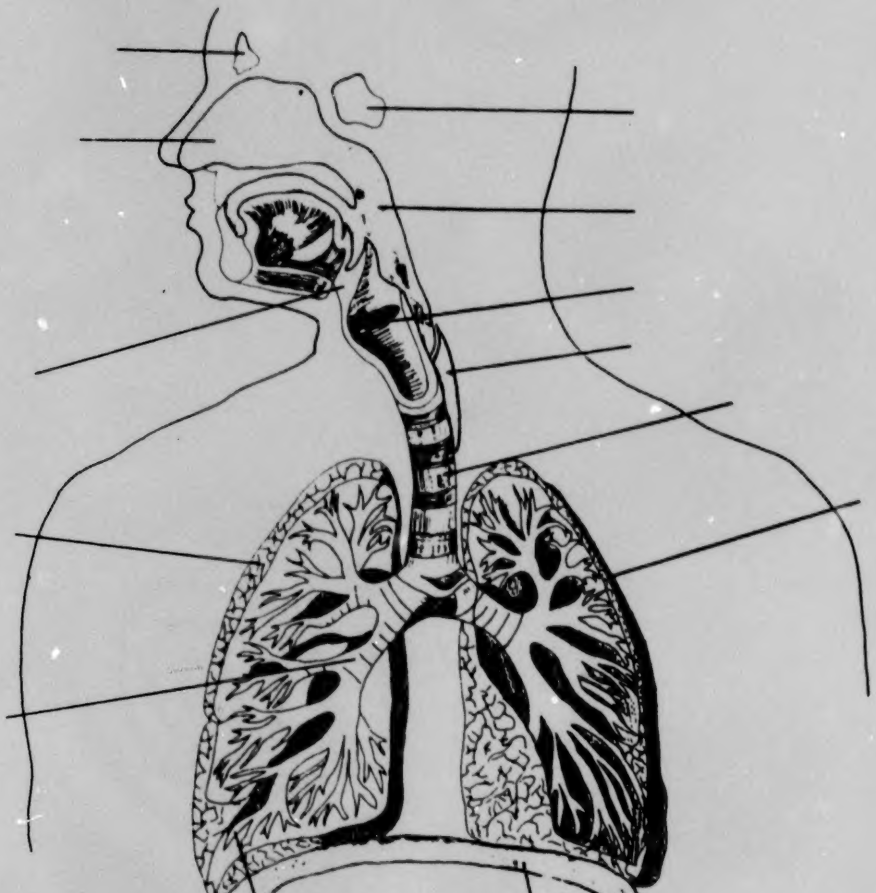
THE RESPIRATORY SYSTEM

ASSIGNMENT SHEET #1--DIAGRAM OF PARTS OF RESPIRATORY SYSTEM

Directions: Label the following parts of the respiratory system.

sinus
pharynx
nasal cavity
epiglottis
larynx
esophagus

trachea
left lung
right lung
right bronchus
diaphragm



UNIT X-E

THE RESPIRATORY SYSTEM

ASSIGNMENT SHEET #2--DIAGRAM OF DIFFUSION OF GASES

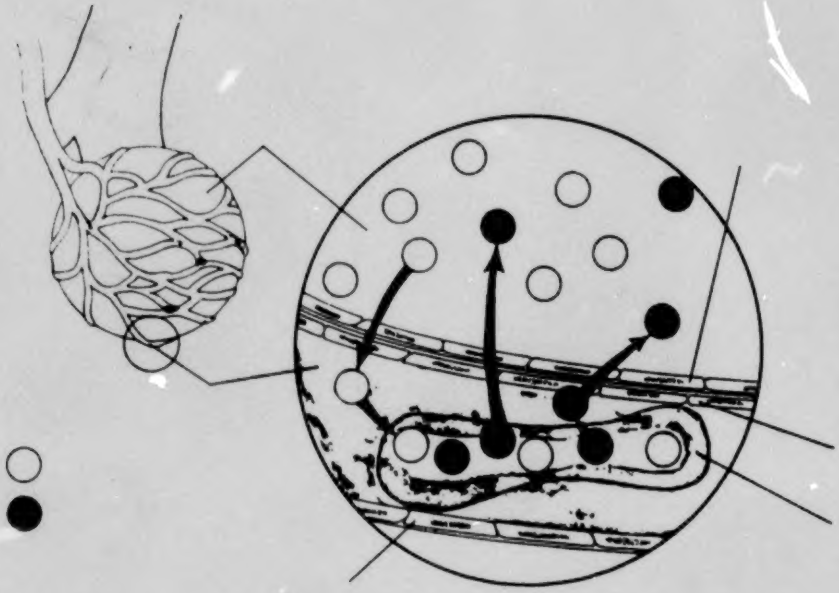
Directions: Label the following parts of the diagram of diffusion of gases:

capillary wall	oxygen molecules
capillary	carbon dioxide molecules
alveolus	erythrocyte

Label the following parts of the enlarged section of the lung:

alveolar duct
alveolus
alveolar sac

DIFFUSION OF GASES



UNIT X-E

THE RESPIRATORY SYSTEM

ASSIGNMENT SHEET #3--FUNCTION OF SOME RESPIRATORY PARTS

Directions: Complete the following outline.

1. Nostrils
   - A. Filter air by means of hairs in nostrils
   - B.
   - C.
2. Sinuses
   - A. Enhance resonance of voice
   - B.
   - C.
3. Pharynx
   - A. Passageway for food and air
   - B.
4. Larynx
   - A. Contains vocal cords which function in speech production
   - B.

UNIT X-E

THE RESPIRATORY SYSTEM

ASSIGNMENT SHEET #4--RELATIONSHIP BETWEEN CARBON DIOXIDE CONTENT OF BLOOD AND RATE AND DEPTH OF RESPIRATION

Directions: You will need a watch with a second-hand and a paper bag. You will work in pairs.

1. As your partner sits quietly, count respiration for one minute and note depth. Record rate and depth (normal, deep, shallow).

   ________ Rate
   ________ Depth

2. Have partner hyperventilate by breathing deeply and rapidly for two minutes. Immediately count respirations and note depth for one minute.

   ________ Rate
   ________ Depth

3. Have partner rest until normal breathing is resumed.

4. Have partner hyperventilate for two minutes into a paper bag held tightly over nose and mouth. Immediately count respirations for one minute and note depth.

   ________ Rate
   ________ Depth

CONCLUSIONS:

1. Does hyperventilation increase or decrease blood CO_2 content? ____________

2. From your results in step 2 did you find that the decrease in carbon dioxide was followed by an increase or decrease in rate and depth of respirations? ____________

3. Does hyperventilation into the paper bag cause an increase or decrease of carbon dioxide content?

   ____

4. Does an increase in blood carbon dioxide cause an increase or decrease in respiration rate?

   ____

5. Normally, when blood carbon dioxide content increases, do respirations increase or decrease?

____

UNIT X-E

THE RESPIRATORY SYSTEM

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1--Labeled diagram

Assignment Sheet #2--Labeled diagram

Assignment Sheet #3--

1. B. Moist mucosal lining traps bacteria and debris
   C. Warm air prior to entry into pharynx
2. B. Reduce overall weight of skull
   C. Provide mucus for nasal cavity
3. B. Aids in forming vowel sounds
4. B. Protects airway against entrance of solids or liquids during swallowing

Assignment Sheet #4

1. Decrease
2. Rate decreased
   Deep respiration
3. Increase
4. Increase
5. Increase

UNIT X-E

THE RESPIRATORY SYSTEM

UNIT TEST

1. Match the terms relating to the respiratory system on the right to the correct definition using number answers.

_____ a. Nose bleed

_____ b. Normal respiration

_____ c. The exchange of carbon dioxide and oxygen in the lungs

_____ d. Bluish color of skin caused by oxygen deficiency in the blood

_____ e. The moving of molecules from a region of higher concentration to a region of lower concentration of molecules

_____ f. The phase during which air is drawn into the lungs

_____ g. The exchange of carbon dioxide and oxygen in the body cells

_____ h. The expulsion of air from the alveoli of the lungs

_____ i. The union of oxygen with digested food in the cells with the release of energy; carbon dioxide and water are released as water

_____ j. Inhaling and exhaling air

1. breathing
2. cellular respiration
3. cyanosis
4. diffusion
5. epistaxis
6. eupnea
7. exhalation
8. external respiration
9. inhalation
10. internal respiration

2. List the parts of the respiratory system and give their location and function.

3. Identify the terms pertaining to types of abnormal breathing by completing the following statements.

   A. A lack of oxygen is _________________________.

   B. An oxygen deficiency with a resulting increase in carbon dioxide in the tissues is__________________.

   C. Abnormally increased breathing is_________________.

   D. Respirations gradually increase in rapidity and volume until they reach a climax; then gradually subside, cease entirely for a few seconds, then begin again in ______________________ respiration.

   E. The cessation of breathing is____________________.

4. Explain the mechanics of breathing.

5. Discuss the factors that control respiration.

6. Explain the mechanism of carbon dioxide and oxygen exchange by answering the following questions:

   A. What is diffusion? ______________________________
   ____

   B. After inhalation, is the concentration of oxygen in the alveoli greater or lesser than that of the surrounding capillaries? ______________________

   C. Oxygen from the alveoli moves through the alveolar wall and the capillary wall by the process of ____.

   D. If the oxygen concentration in the blood is greater than the oxygen concentration in the cells, oxygen molecules move into or out of the blood? __________

   E. The combination of oxygen with digested food with the release of energy is ________________________.

   F. What becomes of the carbon dioxide produced in cellular respiration after it returns to the alveoli? ______________________________

   G. What is the overall purpose of external and internal respiration? ______________________________
   ____
   ____

7. Identify the following diseases and disorders of the respiratory system by answering the following questions. Choose the correct word from those listed after each of the following statements.

   A. Allergic reaction, characterized by localized swelling in the walls of the small bronchioles, with secretion of thick mucus and spasm of the smooth muscle walls of the bronchioles. (asthma), (common cold), (epistaxis), (pleurisy) ____________________.

   B. Inflammation of lungs and pleurae, caused by a bacterium. (Occasionally invades other parts of the body.) (sinusitis), (cancer of the lung), (bronchiectasis), (tuberculosis) ____________________

   C. Collapse of part or all of a lung with incomplete expansion of the alveoli. (pleurisy), (common cold), (sinusitis), (atelectasis) ____________________

   D. Inflammation of a sinus. (tuberculosis), (cough), (epistaxis), (sinusitis) ____________________

   E. Dilation of bronchi with cough, voluminous sputum, and labored respiration on exertion. (pleurisy), (bronchiectasis), (common cold), (epistaxis)

      ____

   F. Inflammation of the alveoli of the lung; maybe caused by bacterium or virus. (pleurisy), (pneumonia), (atelectasis), (sinusitis)

      ____

   G. Factors most frequently mentioned as possible causes of this disease are: the presence of foreign particles and irritants in the air, and smoking cigarettes and cigars. (bronchiectasis), (common cold), (cancer of the lung), (asthma)

      ____

   H. Inflammation of the pleura, usually accompanies infections of the lung. (pneumonia), (pleurisy), (influenza), (asthma) ____________________

   I. Most widespread of all communicable diseases, characterized by swollen and inflamed mucous membrane of the nose and throat with copious discharge. (common cold), (atelectasis), (cancer of the lung), (sinusitis) ____________________

J. Acute, contagious disease, characterized by inflammation of the upper respiratory tract and generalized aches and pains. (epistaxis), (pleurisy), (influenza), (asthma) ______________________________

K. Mechanism for clearing obstruction from airway. (atelectasis), (bronchiectasis), (cough), (hay fever) ______________________________

L. Sensitivity to foreign proteins causing watery discharge from eyes and nose. (hay fever), (peneumonia), (cancer of the lung), (emphysema)

____

M. Distention of alveoli due to bronchial obstruction. (cough), (epistaxis), (cancer of the lung), (emphysema) ______________________________

N. Nose bleed. (epistaxis), (common cold), (atelectasis), (influenza) ______________________________

8. Label a diagram of the parts of the respiratory system.

9. Label a diagram of diffusion of gases.

10. Complete an outline of functions of some respiratory parts.

11. Determine the relationship between carbon dioxide content of the blood and the rate and depth of respiration.

(Note: If activities #8 - #11 have not been completed prior to the test, ask the instructor when they should be completed.)

UNIT X-E

THE RESPIRATORY SYSTEM

ANSWERS TO UNIT TEST

1. 5 a.
   6 b.
   8 c.
   3 d.
   4 e.
   9 f.
   10 g.
   7 h.
   2 i.
   1 j.

2. A. Nose (nostrils)--air enters respiratory system through nostrils

   1) Filter air by means of hair in nostrils

   2) Trap bacteria and debris on mucosal surface

   3) Warm air prior to entry into pharynx

   B. Paranasal sinuses--cavities in bones of skull which open into the nasal cavity

   1) Reduce overall weight of skull

   2) Provide mucus for nasal cavity

   3) Enhance resonance of voice

   C. Pharynx--extends from mouth to esophagus

   1) Provides passageway for food and air

   2) Aids in forming vowel sounds

D. Larynx--at upper end of trachea just below the pharynx

   1) Protects airway from entrance of solids or liquids during swallowing

   2) Contains vocal cords which function in speech production

      a. Glottis--opening into the larynx

      b. Epiglottis--covers the glottis during swallowing and thus prevents food or liquid from entering the airway.

E. Trachea--extends from larynx to bronchi

   1) "C"-shaped cartilage rings provide firmness to soft tissue of trachea and thus prevent collapse of airway

   2) Provides passageway for inhaled and exhaled air

F. Bronchi--lead from trachea to each lung

   1) Bronchi branch to form secondary bronchi

   2) Bronchioles are branches of secondary bronchi

   3) Alveolar ducts are branches of bronchioles which lead to alveoli

G. Lungs--pair of lobed organs in chest cavity; extend from diaphragm to clavicle

   1) Alveoli--tiny air sacs that actually make up the lungs

   2) Actual exchange of oxygen and carbon dioxide takes place through the walls of the alveoli

H. Diaphragm

   1) Separates abdominal and chest cavities

   2) Contraction of diaphragm causes air to enter lungs

I. Pleura--serous membrane that covers the lungs and lines chest cavity

3. A. anoxia

   B. asphyxia

   C. hyperpnea

   D. Cheyne-Stokes

   E. apnea

4. A. Diaphragm and intercostal muscles contract enlarging chest cavity; air rushes in to fill lungs

   B. Diaphragm and intercostal muscles relax; air is pushed out of lungs by the elastic recoil of chest and lungs

5. A. Medulla and pons of brain control inhalation and expiration

   B. Increased carbon dioxide level in the blood stimulates breathing

   C. Increased ventilation permits loss of carbon dioxide from blood and decrease in rate of breathing

   D. Other factors that may be involved in the control of respiration are age, sensory stimuli, blood pressure, or shock

6. A. Diffusion is the movement of molecules from a region of higher concentration to a region of lower concentration of molecules

   B. greater

   C. diffusion

   D. out of

   E. cellular respiration

   F. exhaled

   G. provide oxygen for cellular respiration

7. A. asthma

   B. tuberculosis

   C. atelectasis

D. sinusitis

E. bronchiectasis

F. pneumonia

G. cancer of lung

H. pleurisy

I. common cold

J. influenza

K. cough

L. hay fever

M. emphysema

N. epistaxis

8. Evaluated to the satisfaction of the instructor

9. Evaluated to the satisfaction of the instructor

10. Evaluated to the satisfaction of the instructor

11. Evaluated to the satisfaction of the instructor

UNIT X-F

*THE NERVOUS SYSTEM AND SPECIAL SENSES

UNIT OBJECTIVE

After completion of this unit, the student will be able to identify parts of the nervous system and special senses and give their general functions. This knowledge will be evidenced through demonstration and by satisfactory completion of a unit test.

SPECIFIC OBJECTIVES

After completing this unit of instruction, the student will be able to:

1. Identify the three divisions of the nervous system
2. List and identify the main divisions of the brain
3. Cite two functions of the spinal cord
4. List and describe the three protective layers of the spinal cord
5. Discuss the function of the cerebrospinal fluid
6. Identify the divisions of the peripheral nervous system
7. Explain the control of involuntary functions of the body by the sympathetic and parasympathetic nervous systems
8. Identify terms pertinent to the structure, function, and types of neurons and neuroglia
9. Trace the path of impulses as they travel along a reflex arc
10. Point out the parts of the eye and discuss the physiology of vision
11. Point out the parts of the ear and discuss the physiology of hearing

***Reprinted with permission of Occupational Curriculum Laboratory, East Texas State University from Anatomy and Physiology Health Occupations Education, 1978.**

12. List five general senses
13. Recognize diseases and disorders of the nervous system and special senses from definitions
14. Label a diagram of the brain
15. Label a diagram of a neuron
16. Test reflexes and determine referred pain
17. Label a diagram of the eye
18. Label a diagram of the ear
19. In a puzzle, identify names of diseases and disorders of the nervous system and special senses

UNIT X-F

THE NERVOUS SYSTEM AND SPECIAL SENSES

SUGGESTED ACTIVITIES

I. Instructor:

- A. Provide objective sheet
- B. Discuss objective sheet
- C. Pass out information sheet
- D. Discuss information sheet
- E. Make and show transparencies
- F. Distribute and discuss assignment sheets
- G. Use models of brain, eye and ear and to point out parts
- H. Give test and evaluate results

II. Student:

- A. Read and discuss objective sheet
- B. Read and discuss material contained in information sheet
- C. Complete assignment sheets
- D. Observe or participate in demonstration of parts of brain, eye and ear using models or diagrams
- E. Take test

INSTRUCTIONAL MATERIALS

I. Included in this unit:

- A. Objective sheet
- B. Information sheet
- C. Transparency masters

1. TM-1--Diagram of parts of brain
2. TM-2--Diagram of a neuron
3. TM-3--Diagram of eye
4. TM-4--Diagram of ear

D. Assignment sheets

1. Assignment sheet #1 -- Diagram of the brain
2. Assignment sheet #2 -- Diagram of a neuron
3. Assignment sheet #3 -- Testing reflexes and determination of referred pain
4. Assignment sheet #4 -- Diagram of the eye
5. Assignment sheet #5 -- Diagram of the ear
6. Assignment sheet #6 -- Word find puzzle

E. Answers to assignment sheets

F. Test

G. Answers to test

II. References: Books

A. Anderson, Paul D. Clinical Anatomy and Physiology for Allied Health Sciences. Philadelphia, Pennsylvania: W.B. Saunders, 1976.

B. Anthony, Catherine Parker and Irene B. Alyn. Structure and Function of the Body. 5th ed. St. Louis, Missouri: C.V. Mosby Company, 1976.

C. Anthony, Catherine Parker and Norma Jane Kolthoff. Textbook of Anatomy and Physiology. 9th ed. St. Louis, Missouri: C.V. Mosby Company, 1975.

D. Jacob, Stanley W. and Clarice Ashworth Francone. Structure and Function in Man. 3rd ed. Philadelphia, Pennsylvania: W.B. Saunders Company, 1974.

E. Memmler, Ruth Lundeen and Dena Lin Wood. *The Human Body in Health and Disease*. 4th ed. Philadelphia, Pennsylvania: J.B. Lippincott Company, 1977.

UNIT X-F

THE NERVOUS SYSTEM AND SPECIAL SENSES

INFORMATION SHEET

I. Divisions of the nervous system

   A. Central nervous system, consisting of the brain and spinal cord

   B. Peripheral nervous system, consisting of nerves extending to outlying parts of the body

   C. Autonomic nervous system, which controls involuntary functions of the body

II. Brain parts and functions

   A. Cerebrum--largest part of brain, divided into two cerebral hemispheres. The hemispheres are divided into lobes.

      1. Frontal lobe--controls voluntary muscles

      2. Parietal lobe--contains sensory areas; pain, touch, and temperature are integrated here.

      3. Temporal lobe--auditory center, interprets impulses from ear drum

      4. Occipital lobe--visual center, interprets impulses from retina of eye

   B. Cerebellum--composed of two lateral hemispheres and mid-portion. It is dorsal to the pons and medulla oblongata.

      1. Makes possible the production of smooth, coordinated movements

      2. Center for control of equilibrium and posture

   C. Pons--rounded eminence on ventral surface of brain stem; appears as a broad band of transverse fibers. The pons is the part of the brain that attaches to the spinal cord

      1. Transmits messages from one side of the cerebellum to the other

2. Transmits messages from cerebellum to cerebrum and midbrain, and from cerebellum to medulla and spinal cord

3. Connects with four pairs of cranial nerves

4. Controls some reflex actions, as respiration

D. Medulla oblongata--continuous with spinal cord posteriorly and with pons anteriorly.

1. Relay station for passage of impulses between spinal cord and brain

2. Contains control centers for respiration, heartbeat and blood pressure. Death follows quickly if these centers fail to function

III. Spinal cord--lies within spinal canal, extends from medulla to 1st lumbar vertebra

A. Contains centers for reflex action

B. Serves as two-way conduction pathway between brain and nerves

IV. Meninges--layers of connective tissue that surround, enclose, and protect the brain and spinal cord

A. Dura mater--layer of strong white fibrous tissue; serves as outer layer of meninges and inner periosteum of cranial bones

B. Arachnoid membrane--middle layer of meninges; delicate cobweb-like tissue that allows space for fluids

C. Pia mater--inner layer; attaches to nerve tissue of brain and spinal cord. The pia mater contains blood vessels and dips into all depressions of the brain.

V. Cerebrospinal fluid--formed continuously from the blood, circulates around the brain and spinal cord; returns to blood. The cerebrospinal fluid serves as a protective cushion around and within the spinal cord

VI. Peripheral nervous system--composed of nerves that extend to outlying parts of the body

A. Cranial nerves--

1. Twelve pairs of symmetrically-arranged nerves that attach to brain

2. Conduct impulses between brain and various structures in head, neck, thoracic, and abdominal cavities

B. Spinal nerves

1. The 31 pairs of symetrically-arranged nerves attach to spinal cord

2. Conduct impulses between the spinal cord and parts of the body not supplied by cranial nerves

VII. Autonomic nervous system--controls the involuntary or automatic functions of the body, as the action of glands, the smooth muscles of hollow organs, and the heart

A. Sympathetic nervous system--prepares body for stressful situations as in fear, anger, pain

B. Parasympathetic nervous system--acts as balance for the sympathetic system--brings about return to normal activity of the autonomic nervous system

VIII. Cells of the nervous system

A. Neuron--nerve cell body and its extensions, transmits impulses

1. Structure of a neuron

a. Cell body

b. Dendrites--projections that transmit impulses to the nerve cell body

c. Axon--projection that transmits impulses away from the nerve cell body

d. Neurilemma--thin membranous sheath enveloping a peripheral nerve fiber. The neurilemma plays an important role in the regeneration of peripheral nerves.

e. Myelin sheath--fat-like substance forming a protective wrapping around nerve fibers

2. Types of neurons

   a. Sensory (afferent) neuron--transmits impulses to spinal cord or brain

   b. Motor (efferent) neuron--transmits impulses away from the brain or spinal cord to muscles or glands

   c. Interneuron (central or connecting neuron)--conducts impulses from sensory to motor neurons

B. Neuroglia--connective tissue cells that function in supportive, reparative and metabolic capacities

   1. Astrocytes--characterized by threadlike branches which attach to both nerves and small blood vessels. Astrocytes hold small blood vessels close to each other

   2. Microglia--minute neuroglia that move about in inflamed brain tissue and phagocytize microbes

IX Reflex arc

A. Definitions

   1. Receptor--beginning of a dendrite of a sensory neuron

   2. Synapse--microscopic space between the axon endings of one neuron and the dendrites of another

   3. Effector--muscles or glands that respond to stimulation

   4. Reflex--the response to impulse conduction over a reflex arc

B. Path of an impulse

   1. Impulses travel from a receptor, the full length of the sensory neuron's dendrite, through the nerve cell body and axon to the branching, brushlike ends of the axon.

   2. The impulse crosses the synapse between the axon of a neuron, and the dendrites of a second neuron.

3. After crossing the synapse, the impulse continues along the dendrite of the second neuron until the axon of a motor neuron reaches an effector

4. The effector, a muscle or a gland, responds to stimulation; thus a reflex action occurs

X. Structure and function of the eye

A. Parts of eye

1. Sclera--outer, tough, white tissue which gives shape to and protects the eyeball

2. Cornea--transparent, colorless, continuation of the sclera through which light rays enter the eye

3. Choroid--middle layer of the eye which supplies blood to other parts of eye

4. Iris--forward extension of choroid layer, colored part of eye

5. Pupil--opening at center of iris which allows light to enter eye

6. Ciliary body--a muscle which supports and modifies the shape of the lens

7. Retina--third and innermost layer of eye, translates light waves into nerve impulses

   a. Rods--sensitive to dim light, function in night vision

   b. Cones--receptors responsible for detailed vision and color

8. Refracting media of eye

   a. Aqueous humor--fluid that fills portion of eye in front of lens

   b. Vitreous body--gelatinous fluid that fills the portion of the eye behind the lens

   c. Lens--biconcave, crystalline body that constantly adjusts in thickness to focus light rays

9. Accessory organs

    a. Eyebrows and eyelashes--protect against entry of foreign objects into the eyes

    b. Conjunctiva--tissue that lines eyelid and is continuous with surface cells at the margin of the cornea

    c. Eyelids--folds of tissue that cover and protect the eye

    d. Lacrimal apparatus--produces tears that constantly moisten and cleanse eyes

B. Physiology of vision

1. Light rays enter eye through cornea

2. Lens changes thickness to focus rays on retina

3. Retina translates light energy into nerve impulses

4. Nerve impulses are conducted to visual center of cerebrum

XI. Structure and function of the ear

A. External parts of ear

1. Pinna (auricle)--projecting part of ear

2. Auditory canal (meatus)--canal which extends to the middle ear

B. Middle ear

1. Tympanic membrane (ear drum)

2. Eustachian tube--tube leading from middle ear cavity to throat; equalizes pressure on ear drum

3. Ossicles--tiny bones

    a. Malleus (hammer)--attaches to tympanic membrane

b. Incus (anvil)--attaches to malleus

c. Stapes (stirrup)--attaches to oval window of inner ear

4. Oval window--opening between middle ear and inner ear. Covered by membrane

C. Inner ear (labyrinth)

1. Vestibule

2. Cochlea--contains receptors which, when stimulated, transmit nerve impulses to brain

3. Semicircular canals--concerned with equilibrium

D. Physiology of hearing

1. Sound waves enter external auditory canal

2. Tympanic membrane vibrates, causing ossicles to vibrate

3. Vibrations are transmitted mechanically from ossicles to oval window

4. Vibrations of oval window cause pressure waves in liquid of cochlea

5. Nerve centers in cochlea are stimulated by pressure waves and transmit impulses to hearing center in brain

XII. General senses

A. Sense of smell (olfactory)

1. Receptors located in upper part of nasal cavity

2. Impulses from receptors travel by the olfactory nerve to brain

B. Taste sense

1. Taste buds are located on tongue

2. Four tastes are perceived by taste buds, sweet, sour, salt, and bitter

C. Pain sense

1. Receptors widely distributed in body

2. Pain usually is warning of danger to body

3. Referred pain--pain seeming to arise in an area other than its actual origin

D. Other general senses are hunger, thirst, pressure, temperature, position, and touch

XIII. Diseases and disorders of the nervous system and special senses

A. Anorexia--loss of appetite

B. Astigmatism--an irregularity of the curvature of the lens on cornea of the eye, resulting in faulty vision

C. Cerebral palsy--congenital brain disorder, characterized by diverse disorders of muscles varying from weakness to complete paralysis

D. Chorea--convulsive nervous disease characterized by involuntary jerking movements

E. Conjunctivitis--inflammation of the conjunctiva of the eye

F. C.V.A. (cerebrovascular accident)--destruction of brain tissue as a result of hemorrhage from cerebral blood vessels

G. Encephalitis--infection of the brain

H. Epilepsy--chronic disorder with abnormality of brain function without apparent changes in nerve tissues. (Falling sickness)

I. Glaucoma--impaired vision or blindness as a result of excess pressure of eye fluid

J. Hydrocephalus (water on the brain)--gross enlargement of the cranium and atrophy of the brain due to accumulation of excessive amounts of fluid in and around the brain

K. Hyperopia--defect in vision in which light rays focus behind the retina (farsightedness)

L. Meningitis--inflammation of the membranes covering the brain and spinal cord

M. Motion sickness--nausea, vomiting, and dizziness induced by irregular or rhythmic movements, as car sickness or seasickness

N. Multiple sclerosis--chronic, slowly progressive disease of the central nervous system due to degeneration of axons

O. Myopia--defect in vision in which light rays focus in front of the retina (Nearsightedness)

P. Neuralgia--severe, sharp pain along the course of a nerve

Q. Otitis media--inflammation of the middle ear

R. Otosclerosis--type of deafness caused by bone changes that prevent normal vibration of the stapes

S. Paralysis--temporary or permanent loss of function, especially loss of sensation or voluntary motion

T. Poliomyelitis--an acute viral disease which affects the brain and spinal cord. The virus may destroy motor nerve cells in the spinal cord, causing paralysis

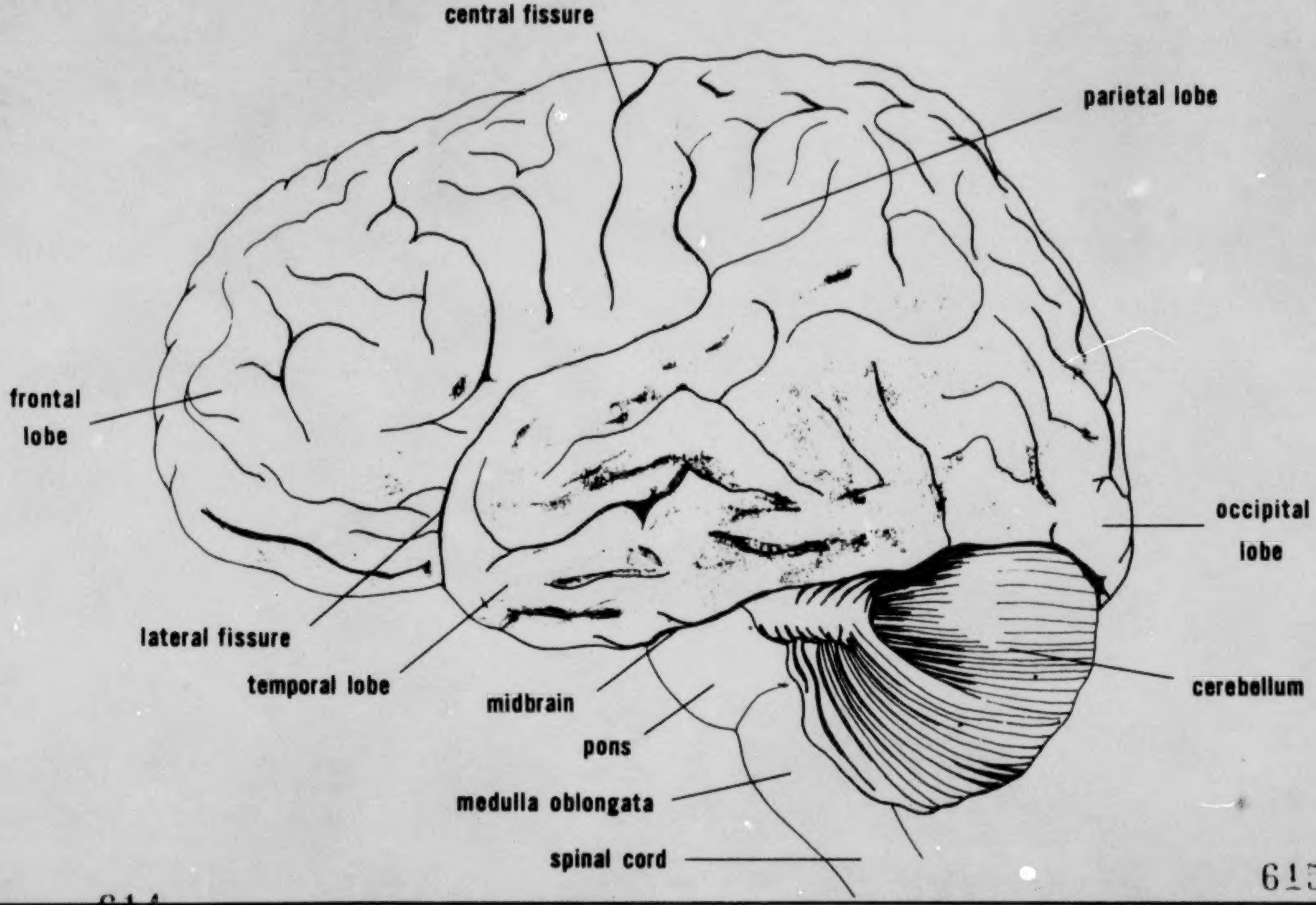
U. Shingles--formation of blisters along the course of a nerve; most frequently the intercostal nerves

V. Strabismus (crossed eyes)--muscles of eyeballs do not coordinate, so the two eyes do not work together

W. Tinnitus--ringing or buzzing sound in ear

X. Vertigo--sense of movement of self or surroundings; dizziness

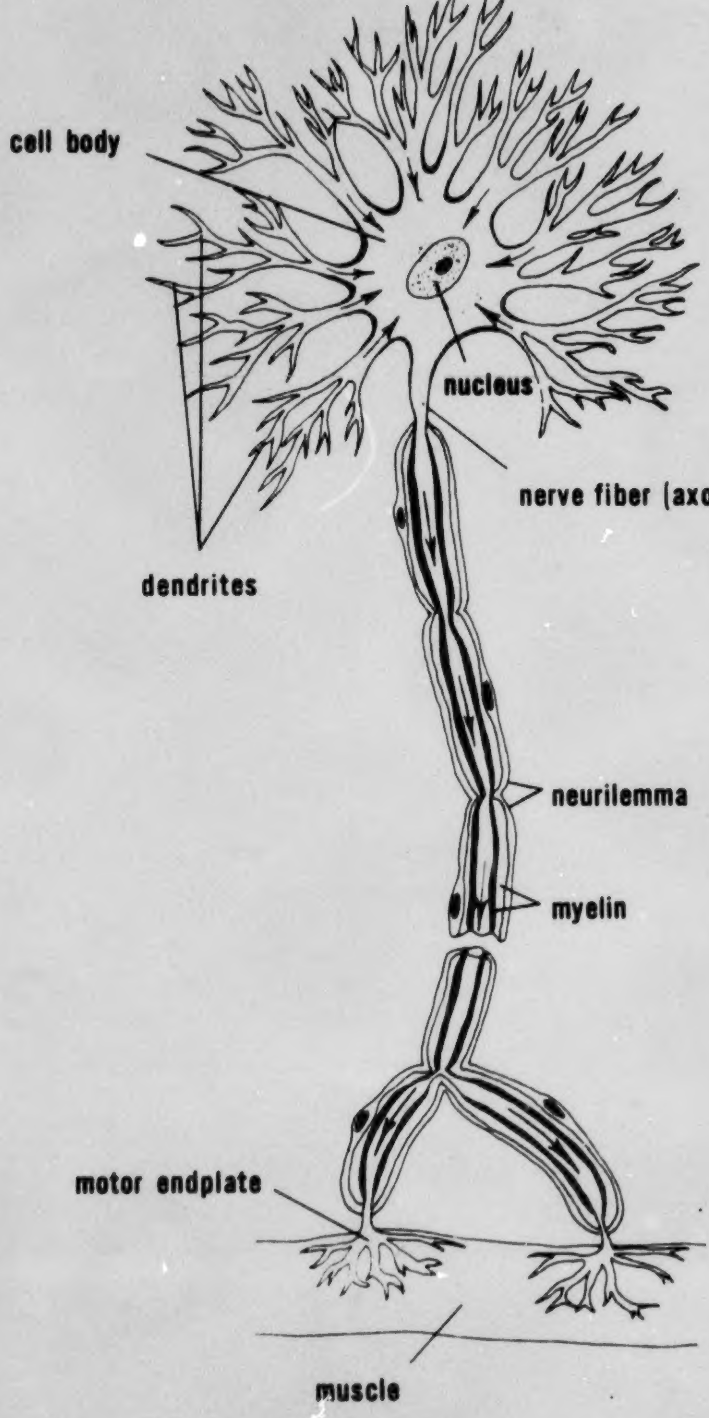
PARTS OF THE BRAIN


central fissure
parietal lobe
frontal lobe
occipital lobe
lateral fissure
temporal lobe
midbrain
cerebellum
pons
medulla oblongata
spinal cord

TM-1

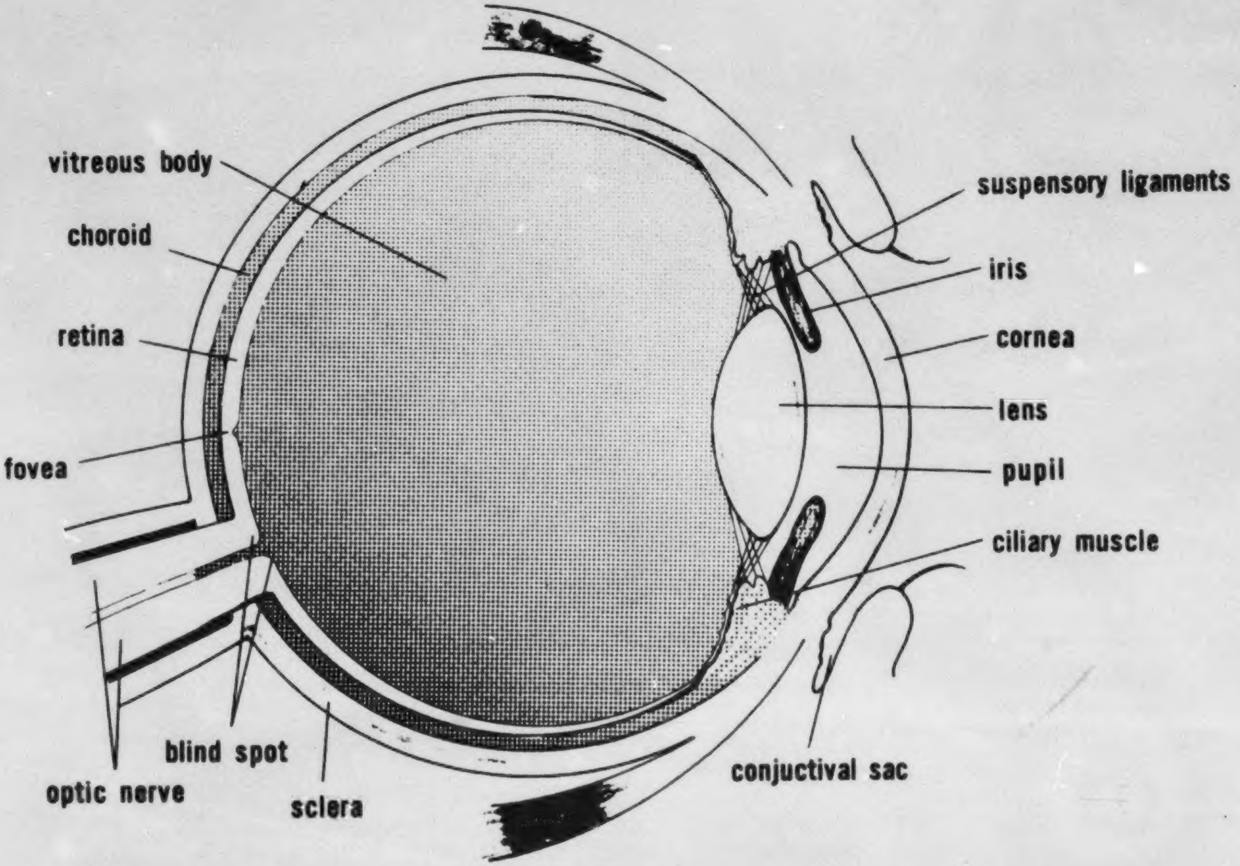
X-F-15

MOTOR NEURON

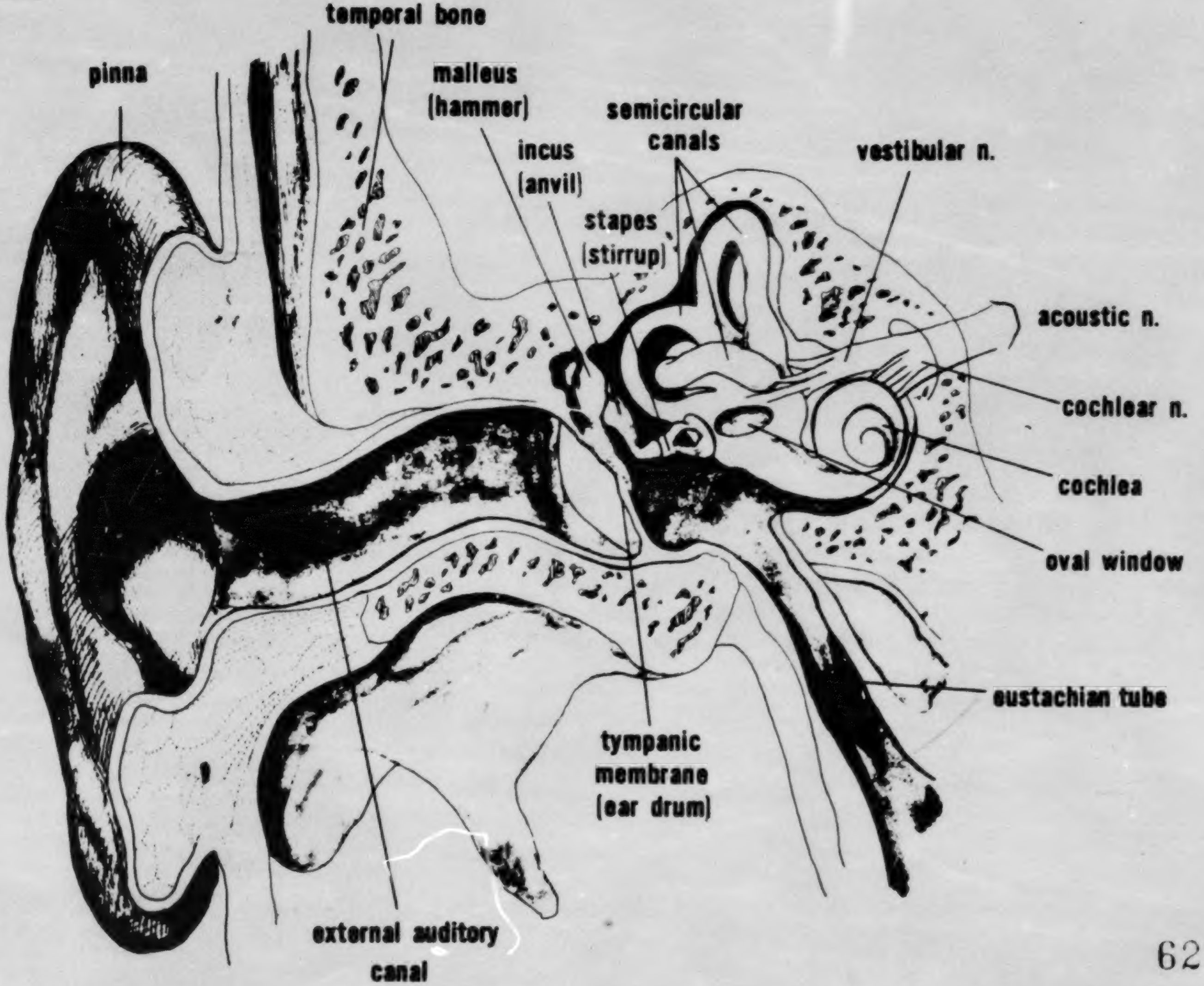

cell body
nucleus
nerve fiber (axon)
dendrites
neurilemma
myelin
motor endplate
muscle

TM-2

PARTS OF THE EYE


vitreous body
choroid
retina
fovea
optic nerve
blind spot
sclera
suspensory ligaments
iris
cornea
lens
pupil
ciliary muscle
conjuctival sac

PARTS OF THE EAR


temporal bone
pinna
malleus
(hammer)
incus
(anvil)
semicircular
canals
stapes
(stirrup)
vestibular n.
acoustic n.
cochlear n.
cochlea
oval window
eustachian tube
tympanic
membrane
(ear drum)
external auditory
canal

UNIT X-F

THE NERVOUS SYSTEM AND SPECIAL SENSES

ASSIGNMENT SHEET #1--DIAGRAM OF THE BRAIN

Directions: Label the following parts of the brain on the accompanying diagram:

Frontal lobe

Parietal lobe

Occipital lobe

Temporal lobe

Cerebellum

Pons

Medulla oblongata

Spinal cord

UNIT X-F

THE NERVOUS SYSTEM AND SPECIAL SENSES

ASSIGNMENT SHEET #2--DIAGRAM OF A NEURON

Directions: Label the following parts on the diagram of a neuron:

Nucleus

Cell body

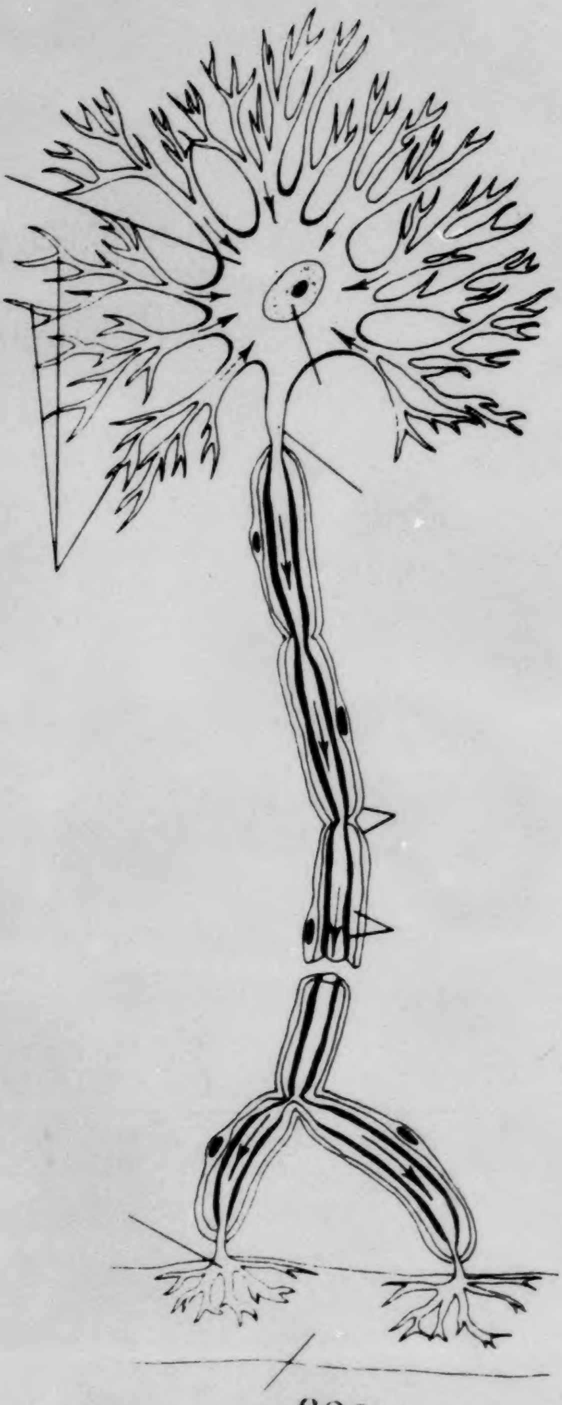
Dendrites

Axon

Neurilemma

Myelin

MOTOR NEURON



UNIT X-F

THE NERVOUS SYSTEM AND SPECIAL SENSES

ASSIGNMENT SHEET #3--TESTING REFLEXES AND DETERMINATION OF REFERRED PAIN

Directions: Students will work in pairs

1. Ask your partner to sit on a chair, cross one leg over the other and close eyes. Using moderate force, tap the area of the patellar tendon with a rubber hammer or with the edge of your hand. Note the movement of the lower leg in response to this stimulus.
2. Support your partner's elbow in your left hand. With a rubber hammer, tap the tendon of the triceps muscle sharply just above the elbow. Note and describe the movement of the forearm in response to this stimulation.
3. Ask your partner to kneel on a chair with ankles and feet projecting over the edge. Tap the Achilles tendon with a rubber hammer. Note and describe the movements of the foot in response to this stimulation.
4. To demonstrate referred pain:

   Place the tips of the fingers over the ulnar nerve at the elbow and move them back and forth while applying pressure. This will cause a slightly painful, tingling sensation. The sensation will be referred to the hand.

   Write the answers to the following questions:

   1. What is a reflex?
   2. What is a receptor?
   3. What is an effector?
   4. What is referred pain?

UNIT X-F

THE NERVOUS SYSTEM AND SPECIAL SENSES

ASSIGNMENT SHEET #4--DIAGRAM OF THE EYE

Directions: Label the following parts of the diagram of the eye:

Optic nerve

Retina

Choroid

Sclera

Pupil

Vitreous body

Iris

Cornea

Lens

Ciliary body

UNIT X-F

THE NERVOUS SYSTEM AND SPECIAL SENSES

ASSIGNMENT SHEET #5--DIAGRAM OF EAR

Directions: Label the following parts of the diagram of the ear:

Pinna

Auditory canal

Tympanic membrane

Eustachian tube

Malleus

Incus

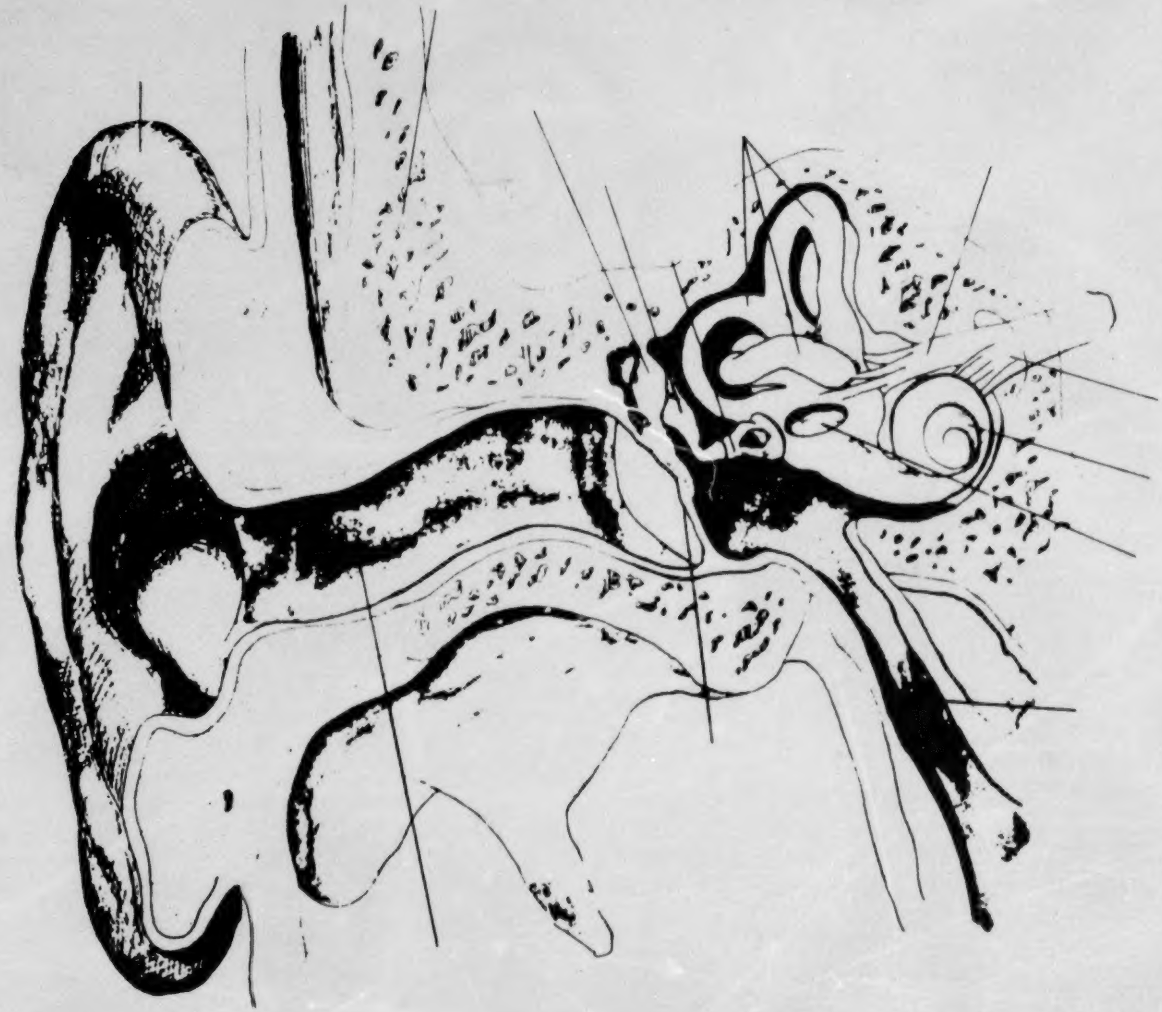
Stapes

Oval window

Cochlea

Semicircular canals

PARTS OF THE EAR



UNIT X-F

THE NERVOUS SYSTEM AND SPECIAL SENSES

ASSIGNMENT SHEET #6--WORD FIND PUZZLE

Directions: The following terms, which are disorders of the nervous system and special senses, can be found in the puzzle. They may be written forward, backward, vertically, horzontally, or diagonally. Circle each term as you find it.

Anorexia

Astigmatism

Cerebral palsy

Chorea

Conjunctivitis

C.V.A.

Encephalitis

Epilepsy

Glaucoma

Hydrocephalus

Hyperopia

Meningitis

Motion sickness

Multiple sclerosis

Myopia

Neuralgia

Otitis media

Otosclerosis

Paralysis

Poliomyelitis

Shingles

Strabismus

Tinnitus

Vertigo

WORD FIND PUZZLE

M U L T I P L E S C L E R O S I S K H
S C O C O N J U N C T I V I T I S P Y
I T A L A I P O Y M N O N S T U E O P
T V I S V W X O E P Q S E U A S N L E
A B D E C B O N C D I E U L F I K I R
M G E L H I 1 S J S P K R A G T C O O
G V M G L N M T O N A O A H L I I M P
I E S N G C E R E B R A L P A L S Y I
T R I I P Q E A R S A I G E U A N E A
S T T H T L U B V A L X I C C H O L W
A I I S C X A I Y E Y E A O O P I I Z
S G T S T A K S L R S R O R M E T T S
L O O N Y T O M T O I O L D A C O I L
S T I N N I T U S H S N O Y E N M S O
O E P I L E P S Y C H A C H A E T V T

UNIT X-F

THE NERVOUS SYSTEM AND SPECIAL SENSES

ANSWERS TO ASSIGNMENT SHEETS

Assignment sheet #1--Labeled diagram	TM-1
Assignment sheet #2--Labeled diagram	TM-2

Assignment sheet #3--

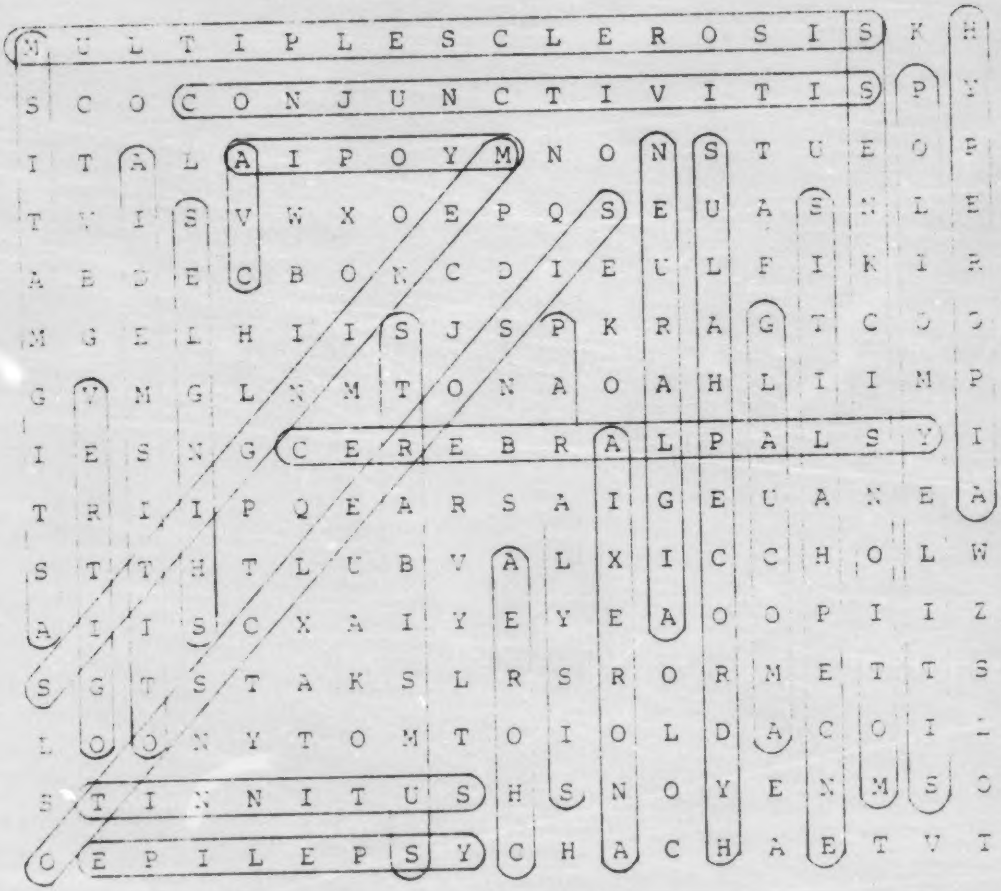
1. The response to an impulse conducted over a reflex arc
2. The beginning of a dendrite of a sensory nerve
3. The muscles or glands that respond to stimulation
4. Pain seeming to arise in an area other than its actual origin

Assignment sheet #4--Labeled diagram	TM-3
Assignment sheet #5--Labeled diagram	TM-4

Assignment sheet #6--See "Answer to Word Find Puzzle"

ANSWER TO ASSIGNMENT SHEET #6

WORD FIND PUZZLE



M	U	L	T	I	P	L	E	S	C	L	E	R	O	S	I	S	K	H
S	C	O	C	O	N	J	U	N	C	T	I	V	I	T	I	S	P	Y
I	T	A	L	A	I	P	O	Y	M	N	O	N	S	T	U	E	O	P
T	V	I	S	V	W	X	O	E	P	Q	S	E	U	A	S	N	L	E
A	B	D	E	C	B	O	N	C	D	I	E	U	L	F	I	K	I	R
M	G	E	L	H	I	I	S	J	S	P	K	R	A	G	T	C	O	O
G	V	M	G	L	N	M	T	O	N	A	O	A	H	L	I	I	M	P
I	E	S	N	G	C	E	R	E	B	R	A	L	P	A	L	S	Y	I
T	R	I	I	P	Q	E	A	R	S	A	I	G	E	U	A	N	E	A
S	T	T	H	T	L	U	B	V	A	L	X	I	C	C	H	O	L	W
A	I	I	S	C	X	A	I	Y	E	Y	E	A	O	O	P	I	I	Z
S	G	T	S	T	A	K	S	L	R	S	R	O	R	M	E	T	T	S
L	O	O	N	Y	T	O	M	T	O	I	O	L	D	A	C	O	I	L
S	T	I	N	N	I	T	U	S	H	S	N	O	Y	E	N	M	S	O
O	E	P	I	L	E	P	S	Y	C	H	A	C	H	A	E	T	V	T

UNIT X-F

THE NERVOUS SYSTEM AND SPECIAL SENSES

UNIT TEST

1. Identify the three divisions of the nervous system.

2. Identify the main divisions of the brain by completing the following statements.

   a. The largest part of the brain is the __________ a.

   b. The part of the brain that is continuous with the spinal cord **posteriorly** and with the pons **anteriorly** is the __________ b.

   c. The rounded eminence of the brain on the ventral surface of the brain stem is the ______________ c.

   d. The part of the brain composed of two lateral hemispheres and a mid-portion, dorsal to the pons and medulla oblongata is the ____________ d.

3. Give two functions of the spinal cord.

   a.

   b.

4. List and describe the three protective layers of the brain and spinal cord.

   a.

   b.

   c.

5. Discuss the function of the cerebrospinal fluid.

6. Identify the divisions of the peripheral nervous system by answering the following questions:

   a. How many pairs of cranial nerves are there?

   b. To what structure are they attached?

   c. Name four parts of the body that send impulses to the brain by means of the cranial nerves.

      1.

      2.

      3.

      4.

   d. How many pairs of spinal nerves are there?

   e. To what structure are they attached?

   f. To what parts of the body do the spinal nerves conduct impulses from the spinal cord?

7. Explain the control of involuntary functions of the body by the sympathetic and parasympathetic nervous systems.

8. Identify terms pertaining to structure and function of neurons and neuroglia by completing the following statements:

A. A nerve cell body and its extensions is a (an) ____________ A.

B. Projections that transmit impulses to the nerve cell body are called ____________ B.

C. Projections that transmit impulses away from the nerve cell body are called ____________ C.

D. The thin, membranous sheath enveloping a peripheral nerve fiber which plays an important role in the regeneration of peripheral nerves is the ____________ D.

E. The fatlike substance that forms a protective wrapping around nerve fibers is the ____________ E.

F. Three types of neurons are sensory (afferent), interneurons or ____________ F.

G. Connective tissue cells that function in supportive, reparative or metabolic capacities are called ____________ G.

H. Two types of neuroglia are astrocytes and ____________ H.

9. Trace the path of impulses as they travel along a reflex arc.

10. Discuss the physiology of vision.

11. Discuss the physiology of hearing.

12. List five general senses.

A.

B.

C.

D.

E.

13. Match diseases and disorders on the right to their **correct definitions**.

_____a. Infection of the brain

_____b. Ringing or buzzing sound in ear

_____c. Chronic, slowly progressive disease of the central nervous system due to degeneration of axons

_____d. Defect in vision in which light rays focus in front of retina (nearsightedness)

_____e. Acute viral disease which affects the brain and spinal cord. This virus may destroy motor nerve cells in the spinal cord causing paralysis

_____f. Loss of appetite

_____g. Inflammation of the middle ear

_____h. Temporary or permanent loss of function, expecially loss of sensation or voluntary motion

1. Anorexia
2. Astigmatism
3. Cerebral palsy
4. Chorea
5. Conjunctivitis
6. C.V.A.
7. Encephalitis
8. Epilepsy
9. Glaucoma
10. Hydrocephalus
11. Hyperopia
12. Meningitis
13. Motion sickness

_____i. Congenital brain disorder characterized by diverse disorders of muscles varying from weakness to complete paralysis

_____j. Type of deafness caused by bone changes that prevent normal vibration of the stapes

_____k. An irregularity of the curvature of the lens or cornea of the eye, resulting in faulty vision

_____l. Convulsive nervous disease characterized by involuntary jerking movements

_____m. Severe, sharp pain along the course of a nerve

_____n. Formation of blisters along the course of a nerve, most frequently the intercostal nerves

_____o. Destruction of brain tissue as a result of hermorrhage from cerebral blood vessels

_____p. Inflammation of the membrane covering the brain and spinal cord

_____q. Nausea, vomiting and dizziness induced by irregular or rhythmic movements, as car sickness or sea sickness

_____r. Inflammation of the conjunctiva of the eye

_____s. Impaired vision or blindness as a result of excess pressure of eye fluid

_____t. Sense of movement of self or surroundings, dizziness

14. Multiple sclerosis

15. Myopia

16. Neuralgia

17. Otitis media

18. Otosclerosis

19. Paralysis

20. Poliomyelitis

21. Shingles

22. Strabismus

23. Tinnitus

24. Vertigo

_____u. Gross enlargement of the cranium and atrophy of the brain due to accumulation of excessive amounts of fluid in and around the brain

_____v. Defect in vision in which light rays focus behind the retina (farsightedness)

_____w. Chronic disorder with abnormality of brain function without apparent changes in nerve tissue (falling sickness)

_____x. Muscles of eyeballs do not coordinate, so the two eyes do not work together

14. Label a diagram of the brain

15. Label a diagram of a neuron

16. Label a diagram of the eye

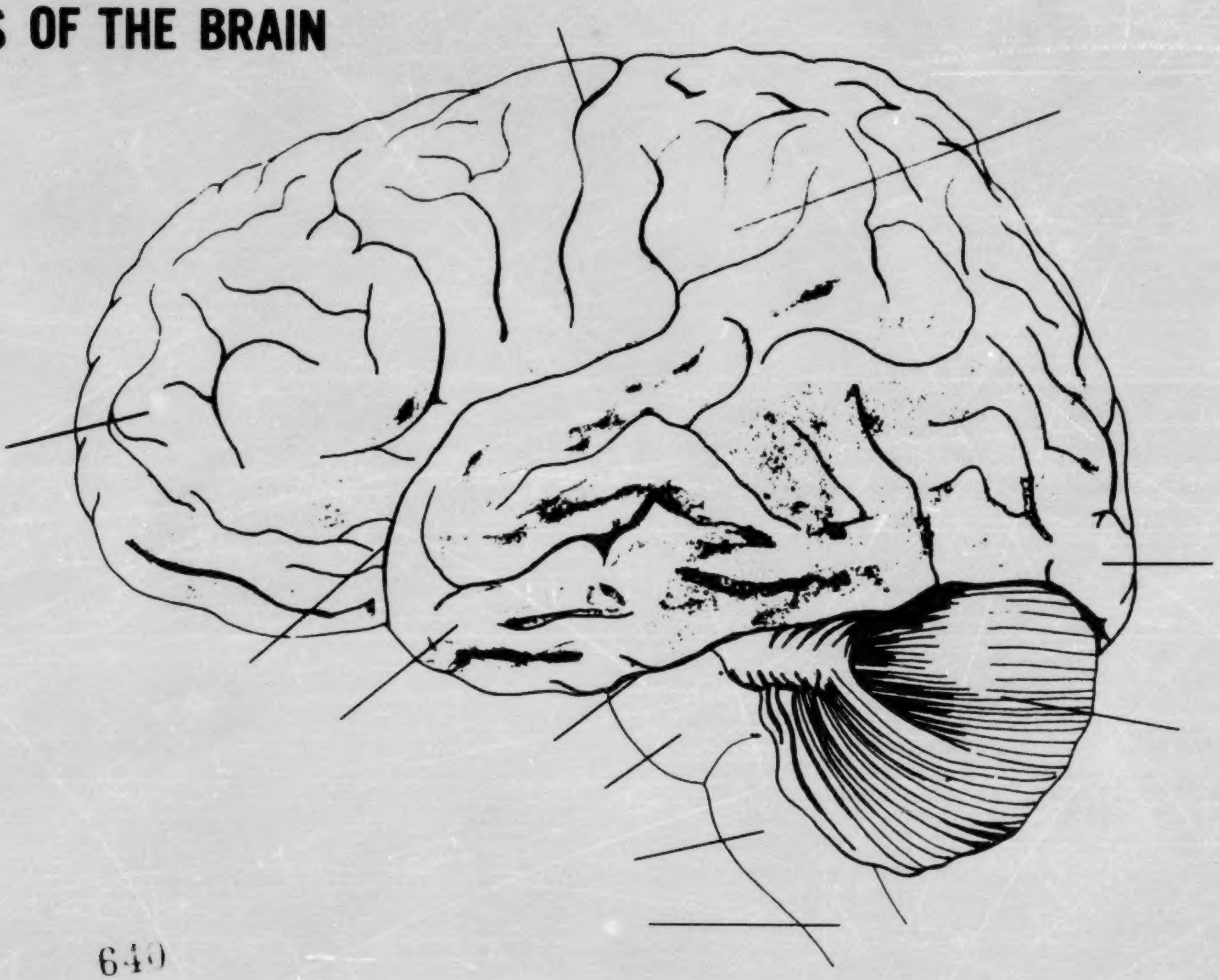
17. Label a diagram of the ear

18. Test reflexes and determine referred pain

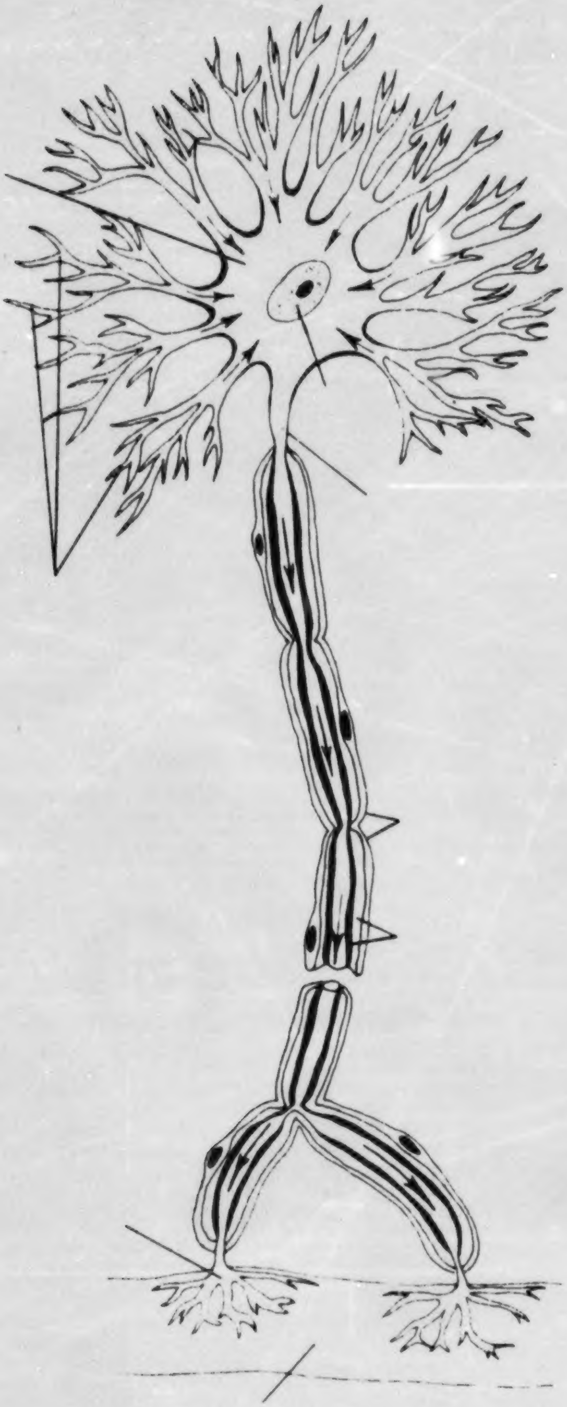
19. Identify names of diseases and disorders of the nervous system and special senses in a puzzle.

(Note: If activities #18 - #19, have not been completed prior to the test, ask the instructor when they should be completed.)

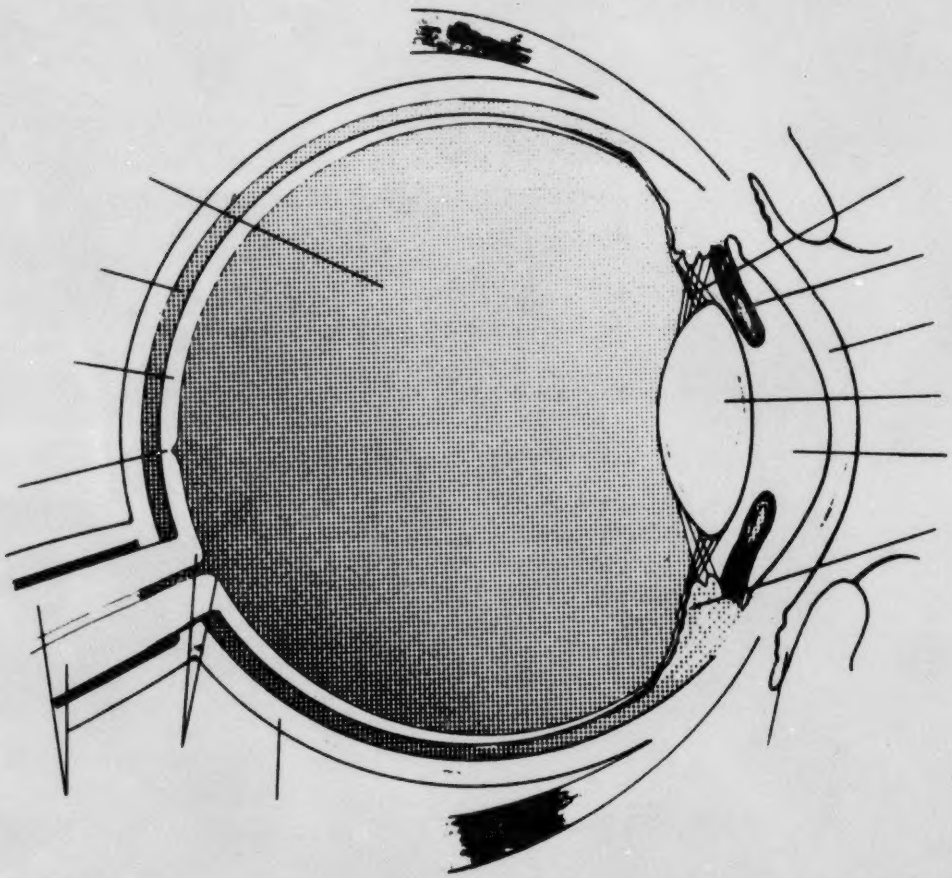
PARTS OF THE BRAIN



MOTOR NEURON



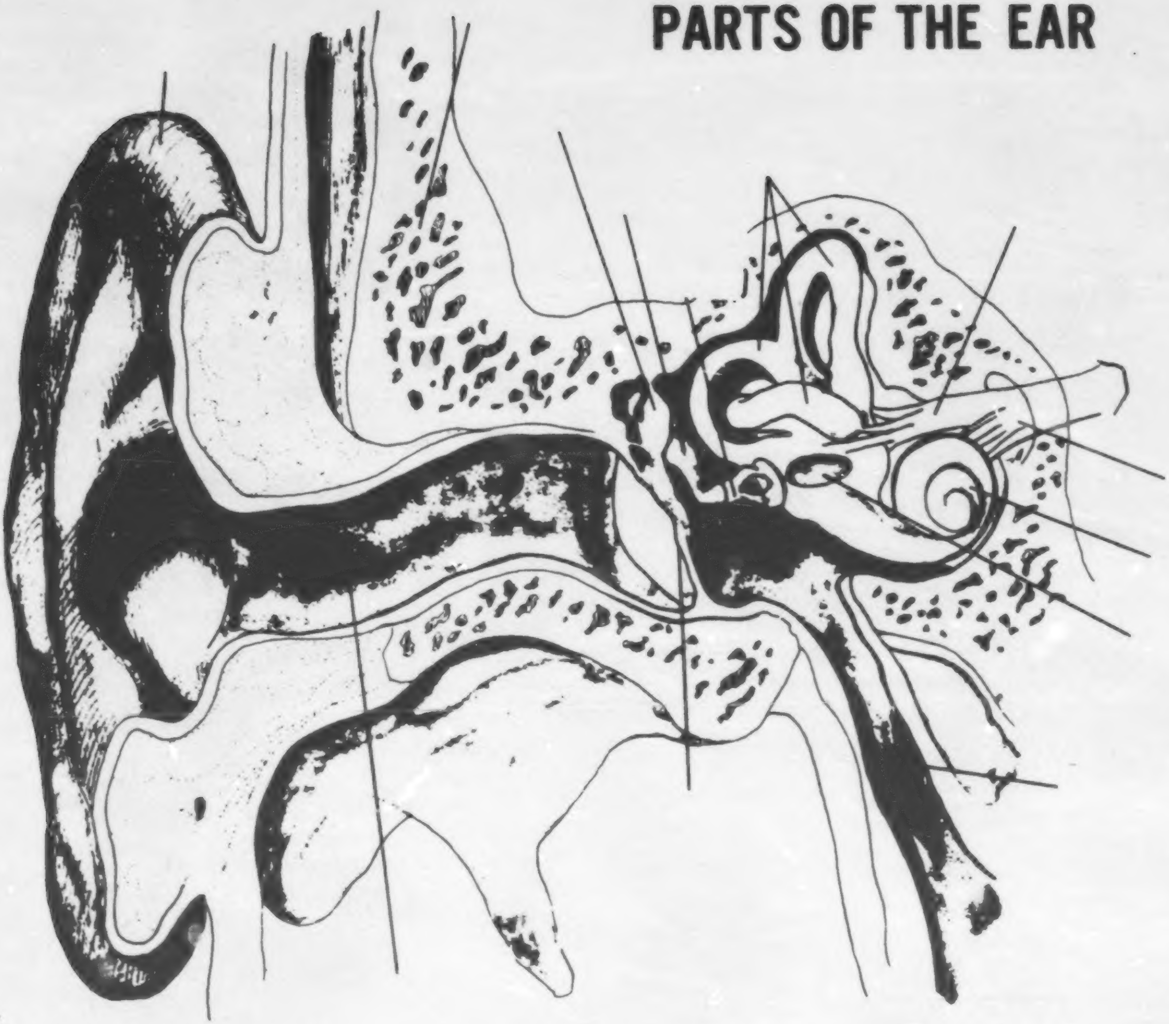
PARTS OF THE EYE



643

X-F-41

PARTS OF THE EAR



X-F-42

UNIT X-F

THE NERVOUS SYSTEM AND SPECIAL SENSES

ANSWERS TO UNIT TEST

1. The central nervous system, consisting of the brain and spinal cord

   The peripheral nervous system consisting of nerves extending to outlying parts of the body

   The autonomic nervous system which controls involuntary functions of the body

2. A. Cerebrum

   B. Medulla oblongata

   C. Pons

   D. Cerebellum

3. A. Contains centers for reflex action

   B. Serves as two-way conduction pathway between brain and nerves

4. A. Dura mater--layer of strong white, fibrous tissue that serves as the outer layer of the meninges and the inner periosteum of cranial bones

   B. Arachnoid membrane--middle layer of the meninges, a delicate cobweb-like tissue that allows space for fluids

   C. Pia mater--inner layer, attached to nerve tissue of brain and spinal cord. The pia mater contains blood vessels, and dips into all depressions of the brain

5. The cerebrospinal fluid serves as a protective cushion around and within the spinal cord. It is formed continuously from the blood, circulates around the brain and spinal cord, and returns to the blood

6. A. 12 pairs

   B. Brain

   C. Head, neck and thoracic and abdominal cavities

D. 31 pairs

E. Spinal cord

F. All parts of body not supplied by cranial nerves

7. The sympathetic nervous system prepares the body for stressful situations as in fear, anger or pain. The parasympathetic system acts as a balance for the sympathetic system. It brings about a return to normal activity of the autonomic nervous system.

8. A. Neuron

   B. Dendrites

   C. Axons

   D. Neurilemma

   E. Myelin sheath

   F. Motor (efferent)

   G. Neuroglia

   H. Microglia

9. Impulses travel from a receptor the full length of the sensory neuron's dendrite, through the nerve cell body and axon, to the ends of the axon. The impulse crosses the synapse between the axon of a neuron and the dendrites of a second neuron.

   After crossing the synapse, the impulse continues along dendrite of second neuron until the axon of a motor neuron reaches an effector.

   The effector, a muscle or gland, responds to stimulation, completing the reflex arc.

10. Discussion should include:
    Light rays enter the eye through the cornea. Lens changes thickness to focus rays on retina. Retina translates light energy into nerve impulses. Nerve impulses are conducted to the visual center of the cerebrum.

11. Discussion should include:
    Sound waves enter the external auditory canal. The tympanic membrane vibrates, causing ossicles to vibrate.

The vibrations of the oval window cause pressure waves in the liquid of the cochlea. The nerve centers in the cochlea are stimulated by pressure waves and transmit impulses to hearing center in brain

12. Answer will include any five of the following:

Smell
Taste
Pain
Hunger
Thirst
Pressure
Temperature
Position
Touch

13.
7 a.
23 b.
14 c.
15 d.
20 e.
1 f.
17 g.
19 h.
3 i.
18 j.
2 k.
4 l.
16 m.
21 n.
6 o.
12 p.
13 q.
5 r.
9 s.
24 t.
10 u.
11 v.
8 w.
22 x.

14. See TM-1

15. See TM-2

16. See TM-3

17. See TM-4

18. Evaluated to the satisfaction of the instructor.

19. Evaluated to the satisfaction of the instructor.

UNIT X-G

*THE URINARY SYSTEM

UNIT OBJECTIVE

The student will be able to identify terms and disorders related to the urinary system. The student will also be able to describe the parts of and give function of the urinary system and discuss dialysis and transplants. This knowledge will be evidenced through application and by satisfactorily completing a unit test.

SPECIFIC OBJECTIVES

After completing this unit of instruction, the student will be able to:

1. Match terms and definitions related to the urinary system
2. Point out the parts of the urinary system
3. Cite the functions of the urinary system
4. Give the steps in the formation of urine by the kidneys
5. Summarize the characteristics of urine
6. Identify disorders of the urinary system
7. Discuss dialysis and transplants
8. Label a diagram of the urinary system
9. Label a diagram depicting the anatomy of the kidney

*Reprinted with permission of Occupational Curriculum Laboratory, East Texas State University from Anatomy and Physiology Health Occupations Education, 1978.

UNIT X-G

THE URINARY SYSTEM

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide objective sheet

  B. Discuss objective sheet

  C. Pass out information sheet

  D. Discuss information sheet

  E. Make and show transparencies

  F. Distribute and discuss assignment sheets

  G. Use model of urinary system to point out parts

  H. Invite resource speakers to discuss dialysis, organ transplants, and donor banks

  I. Give test and evaluate results

II. Student:

  A. Read and discuss objective sheet

  B. Read and discuss material contained in information sheet

  C. Complete assignment sheets

  D. Observe or participate in demonstration of parts of urinary system

  E. Listen to presentations of speakers

  F. Take test

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objective sheet

B. Information sheet

C. Transparancey masters

    1. TM-1--Diagram of the urinary system

    2. TM-2--Diagram of external and internal anatomy of the kidney

D. Assignment sheets

    1. Assignment sheet #1--Diagram of the urinary system

2. 2. Assignment sheet #2--Diagram of external and internal anatomy of the kidney

E. Answers to assignment sheets

F. Test

G. Answers to test

II. References: Books

A. Anderson, Paul D. Clinical Anatomy and Physiology for Allied Health Sciences. Philadelphia, Pennsylvania: W.B. Saunders, 1976.

B. Anthony, Catherine Parker and Irene B. Alyn. Structure and Function of the Body. 5th ed. St. Louis, Missouri: C.V. Mosby Company, 1976

C. Anthony, Catherine Parker and Norma Jane Kolthoff. Textbook of Anatomy and Physiology. 9th ed. St. Louis, Missouri: C.V. Mosby Company, 1975

D. Jacob, Stanley W. and Clarice Ashworth Francone. Structure and Function in Man. 3rd ed. Philadelphia, Pennsylvania: W.B. Saunders Company, 1974.

E. Memmler, Ruth Lundeen and Dena Lin Wood. The Human Body in Health and Disease. 4th ed. Philadelphia, Pennsylvania: J.B. Lippincott Company, 1977.

UNIT X-G

THE URINARY SYSTEM

INFORMATION SHEET

I. Terms and definitions:

   A. Albumin--A protein found in blood; may be present in urine in some disease conditions

   B. Catheter--A tube for removing fluids from, or injecting fluids into a body cavity, as the urinary bladder

   C. Cystoscope--Instrument used for interior examination of urinary bladder and ureters

   D. Dialysis--Diffusion of dissolved substance through a semipermeable membrane

   E. Diffusion--The spreading of molecules from a region of higher concentration to a region of lower concentration

   F. Enuresis--Involuntary bed-wetting in children over three years of age

   G. Excretion--The elimination of waste products from the body

   H. Micturition--Urination

   I. Semipermeable membrane--Membrane that permits the full passage of some substances but restricts the passage of others

   J. Transplant--Transfer of tissue or organ from one person to another

   K. Urea--Chief nitrogenous constituent of urine, an end product of protein metabolism

II. Parts of the urinary system

   A. Kidneys

      1. Size, shape, location

         a. Average size is 4½" x 2" x 1"

b. Bean-shaped

c. Located on posterior abdominal wall behind the peritoneum at level of twelfth thoracic and first three lumbar vertebrae

2. Anatomy

a. External

(1) Capsule - Covers and protects kidney

(2) Hilum - Concave notch on medial surface of kidney

b. Internal

(1) **Cortex** - Outer layer of kidney

(2) Medulla - Interior of kidney

(3) Renal pyramids - Wedge-shaped parts of medullary material

(4) Renal columns - Inward extensions of coxtex between pyramids

3. Microscopic anatomy

a. Bowman's capsule - Cuplike depression which is the beginning of the convoluted tubule

b. Glomerulus - Cluster of capillaries invaginated in Bowman's capsule

c. Renal corpuscle - Bowman's capsule with glomerulus

d. Nephron - Renal corpuscle, loop of Henle and straight tubule

B. Ureters--Tubes from ten to twelve inches long extending from kidneys to urinary bladder

C. Urinary bladder--Muscular bag in which urine collects. It lies in the pelvic cavity behind the pubic bones

D. Urethra--Tube passing from anterior part of urinary bladder to outside of body

III. Functions of the urinary system

   A. Excretion of waste products from blood

   B. Regulation of water balance of body

   C. Regulation of acid-base balance of the body

IV. Formation of urine

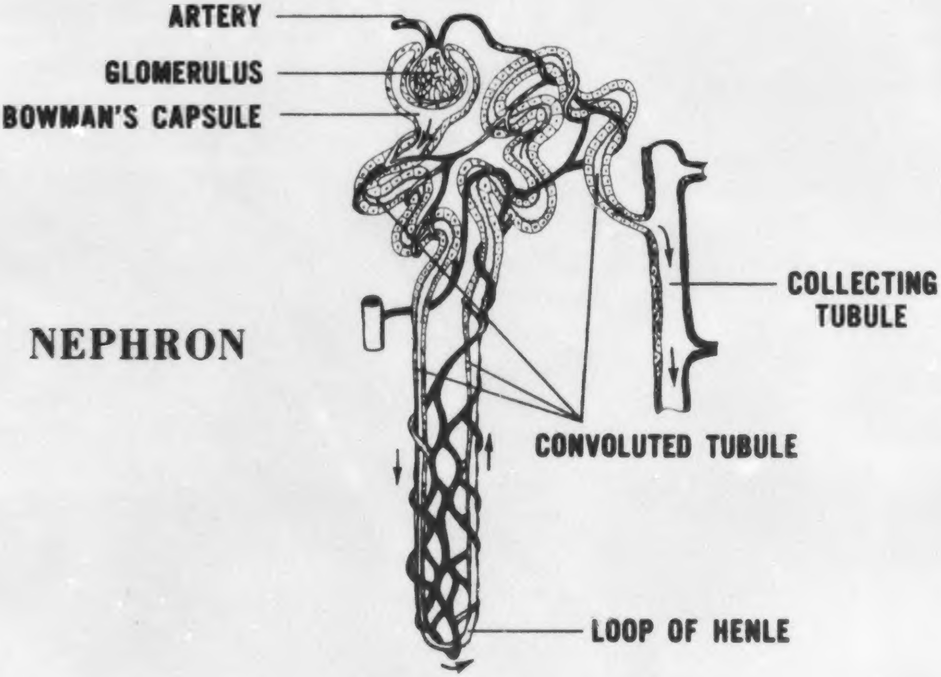
   A. Blood flows to kidney by means of renal artery

   B. In the kidney, the blood flows from artery through progressively smaller vessels to the glomeruli

   C. Water and solutes from the blood filter through the gloumerular walls into Bowman's capsule, normally at the rate of 125 ml/minute

   D. This filtrate then flows into the convoluted tubules, the loop of Henle and finally into the collecting tubules of the nephron

   E. Approximately 97-99% of the water and some of the solute from this filtrate are reabsorbed, re-enter the blood stream, and ultimately leave the kidney by way of the renal vein


ARTERY
GLOMERULUS
BOWMAN'S CAPSULE
NEPHRON
COLLECTING TUBULE
CONVOLUTED TUBULE
LOOP OF HENLE

F. The remainder of the filtrate is collected in collecting tubules. Then it flows into the pelvis of the kidney, leaves the kidney by means of the ureter, and is collected in the urinary bladder as urine

G. Thus, the waste solutes and water are filtered from the blood by the kidney to form urine. The remaining solutes and water are returned to the circulating blood

V. Characteristics of urine

A. Approximately 1500 ml. produced in 24 hours, although the quantity varies greatly with fluid intake, perspiration and other factors

B. Components of urine

1. Water, 95%

2. Nitrogenous wastes as urea, uric acid, ammonia and creatinine

3. Electrolytes as sodium, potassium, ammonia, chloride, bicarbonate, phosphate, and sulphate

4. Toxins - (during disease)

5. Pigments

6. Hormones

7. Abnormal constituents as glucose, albumin, blood, or calculi

VI. Disorders of the urinary system

A. Anuria--Complete urinary suppression or failure of kidney functions

B. Calculus--An abnormal concretion within the body, as a kidney stone

C. Cystitis--Inflammation of the bladder

D. Dysuria--Painful urination-symptom of various disease conditions

E. Edema--Condition in which body tissues contain an excessive amount of tissue fluid

- F. Glycosuria--Presence of glucose in the urine
- G. Incontinence--Inability to retain urine
- H. Nephritis (Bright's disease)--Severe inflammation of the kidneys
- I. Oliguria--Diminished amount of urine formed
- J. Polyuria--Excessive secretion and discharge of urine
- K. Pyelitis--Inflammation of the pelvis of the kidney
- L. Uremia--Condition in which nitrogenous wastes normally excreted by the kidney are retained in the blood
- M. Urethritis--Inflammation of the urethra

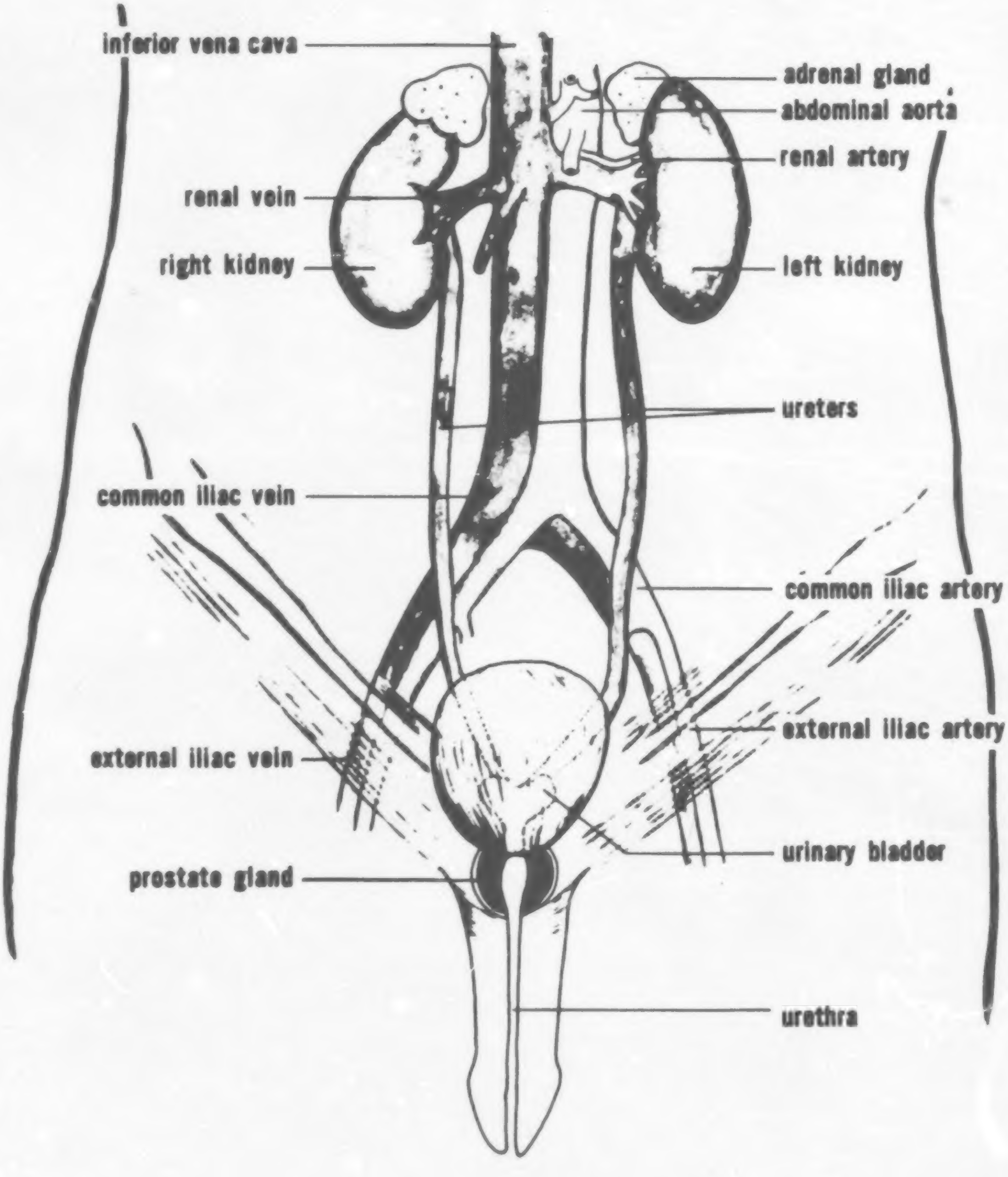
VII. Dialysis and transplants

- A. Dialysis
  1. Treatment for patients who have defective kidney function, with a resulting accumulation of nitrogenous waste products in the blood
  2. The patient's blood is passed through a cellophane spiral tube which is bathed in a solution of chemicals that approximate blood components
  3. Waste from the patient's blood passes through the walls of the cellophane tube into the bath solution, thus cleansing the blood
- B. Transplants
  1. Transplant procedures are most successful when the donor is closely related to the recipient
  2. Procedure is used for patients suffering from renal failure
  3. Problems in kidney transplant
     - a. Tissue rejection

   b. Cause of damage to original kidney may subsequently affect the transplanted kidney

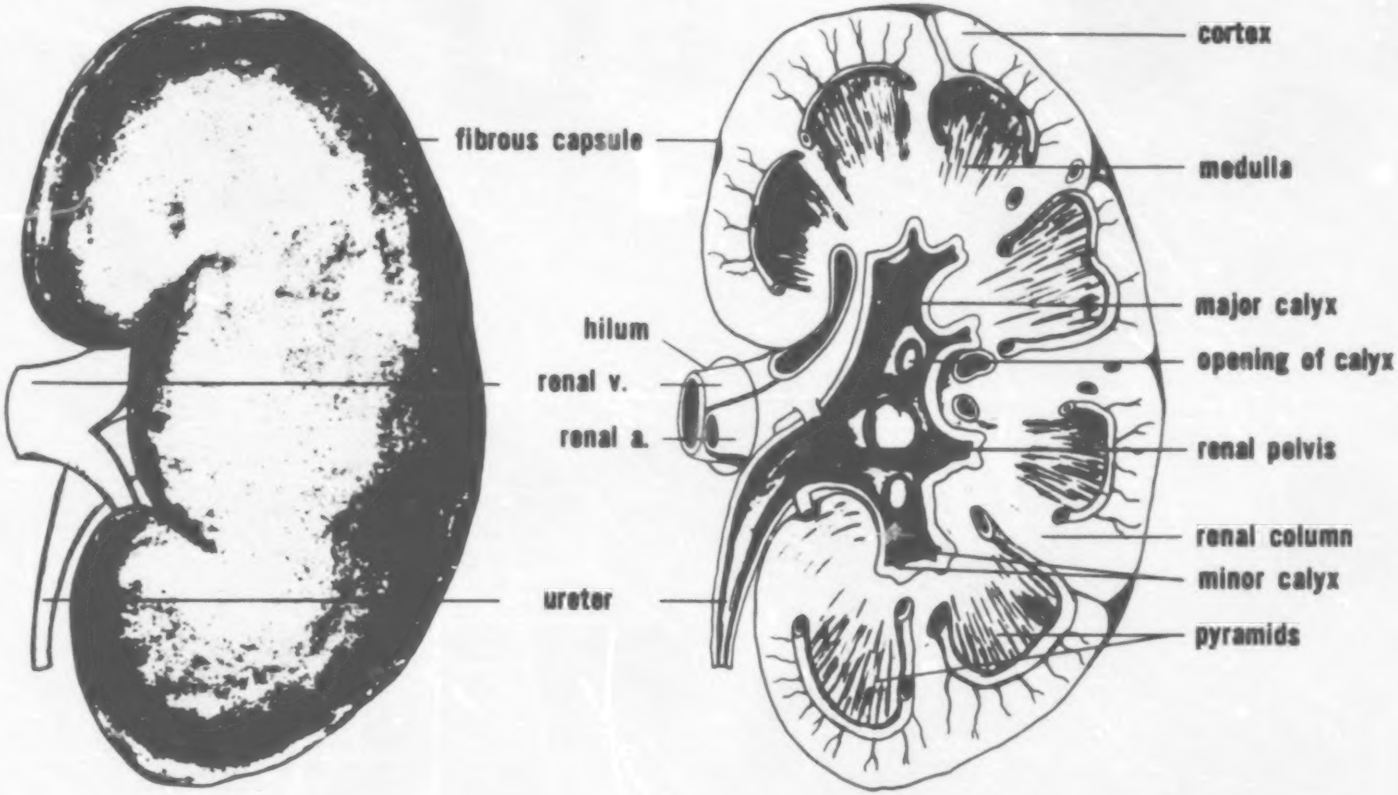
4. Living Bank--Organization that coordinates donations of organs

THE URINARY SYSTEM


inferior vena cava
adrenal gland
abdominal aorta
renal artery
renal vein
right kidney
left kidney
ureters
common iliac vein
common iliac artery
external iliac artery
external iliac vein
urinary bladder
prostate gland
urethra

TM-1

EXTERNAL AND INTERNAL ANATOMY OF THE KIDNEY


fibrous capsule
hilum
renal v.
renal a.
ureter
cortex
medulla
major calyx
opening of calyx
renal pelvis
renal column
minor calyx
pyramids

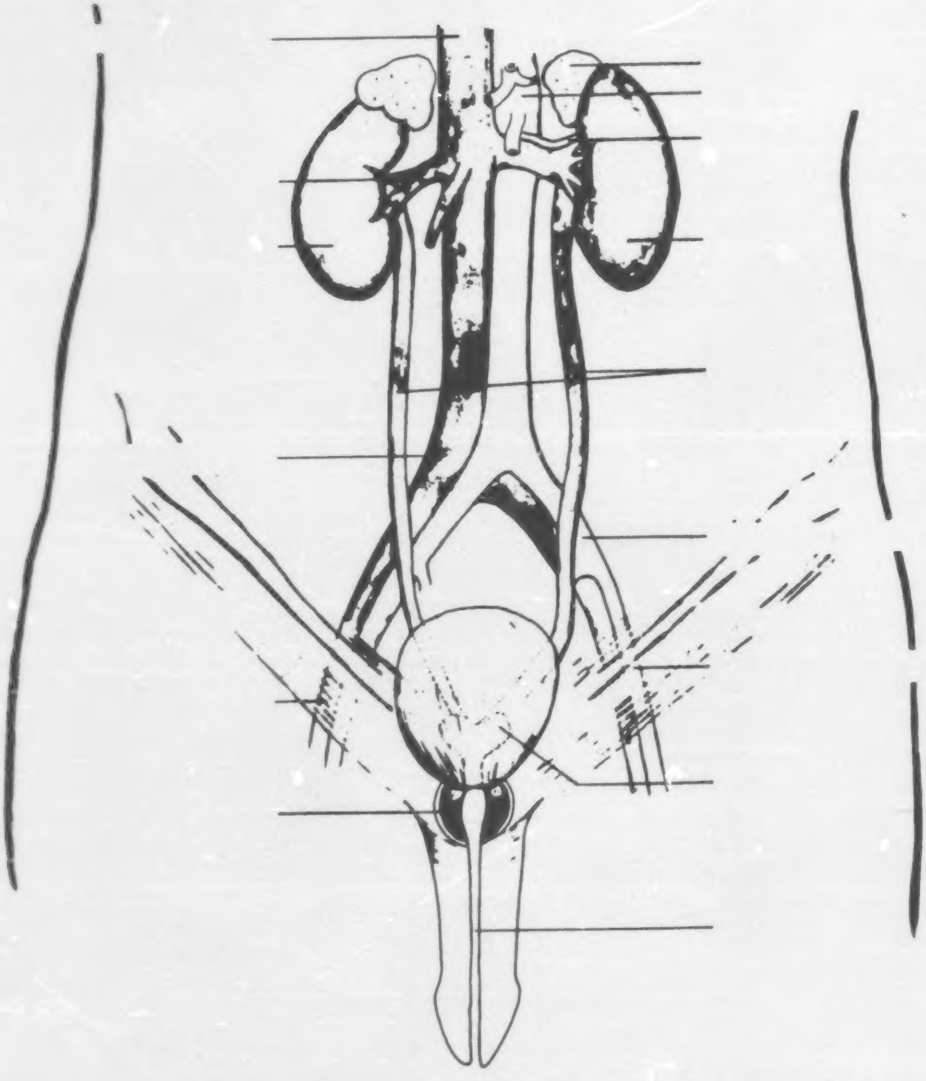
UNIT X-G

THE URINARY SYSTEM

ASSIGNMENT SHEET #1--DIAGRAM OF THE URINARY SYSTEM

Directions: Label the following parts of the diagram of the urinary system.

- renal artery
- renal vein
- left kidney
- right kidney
- ureters
- urinary bladder
- urethra



UNIT X-G

THE URINARY SYSTEM

ASSIGNMENT SHEET #2--DIAGRAM OF EXTERNAL AND INTERNAL ANATOMY OF KIDNEY

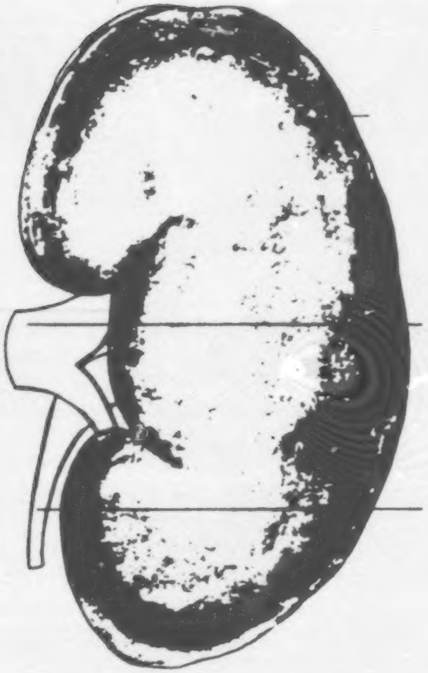
Directions: Label the following parts of the diagram of external and internal anatomy of the kidney.

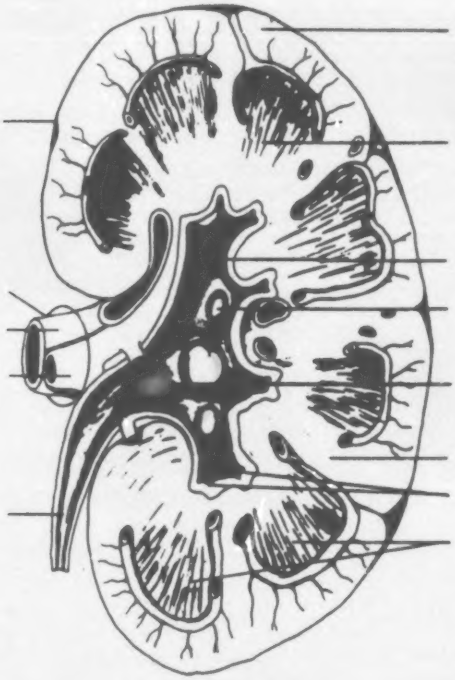
External Anatomy of Kidney

- Capsule
- Renal vein
- Renal artery
- Ureter

Internal Anatomy of Kidney

- Cortex
- Medulla
- Hilum
- Pyramids
- Renal column





UNIT X-G

THE URINARY SYSTEM

ASSIGNMENT SHEET #3--FORMATION OF URINE

Directions: Trace the steps in the formation of urine by completing the following statements:

1. Blood flows to the kidney by means of the blood vessel called the ______________
2. Blood flows through progressively smaller vessels of the kidney until it reaches the ______________
3. Water and solutes from blood filter through glomerular walls into ______________
4. Filtrate moves into the convoluted tubules, the loop of Henle and finally into the collecting __________ of the nephron ______________
5. As the filtrate moves through the convoluted tubule and the loop of Henle, 97-99% of the water and some of the solute from the filtrate are ______________
6. The remainder of the filtrate eventually leaves the kidney by means of the ______________
7. Waste solutes and water filtered from the blood by the kidney form ______________

UNIT X-G

THE URINARY SYSTEM

ASSIGNMENT SHEET #4--WORD SCRAMBLE

Directions: Unscramble the letters below to form the following words associated with disorders of the urinary system:

Anuria
Calculus
Cystitis
Dysuria

Edema
Glycosuria
Incontinence
Nephritis

Oliguria
Polyuria
Pyelitis
Uremia
Urethritis

1. TISPLYEI - - - - - - - -
2. RISTHUREIT - - - - - - - - - -
3. RUNAIA - - - - - -
4. RUDIAYS - - - - - - -
5. PULORIAY - - - - - - - -
6. RIMUEA - - - - - -
7. CULUSAC - - - - - - - -
8. DAEME - - - - -
9. GUROILIA - - - - - - - -
10. STITIYSC - - - - - - - -
11. CONTINEENCIN - - - - - - - - - - - -
12. CYSURIALOG - - - - - - - - - -
13. RIPHTISEN - - - - - - - - -

UNIT X-G

THE URINARY SYSTEM

ANSWERS TO ASSIGNMENT SHEET

Assignment sheet #1--Labeled diagram TM-1

Assignment sheet #2--Labeled diagram TM-2

Assignment sheet #3--Formation of urine

1. Renal artery
2. Glomeruli (us)
3. Bowman's capsule
4. Tubules
5. Reabsorbed
6. Ureter
7. Urine

Assignment sheet #4--Word scramble

1. PYELITIS
2. URETHRITIS
3. ANURIA
4. DYSURIA
5. POLYURIA
6. UREMIA
7. CALCULUS
8. EDEMA
9. OLIGURIA
10. CYSTITIS
11. INCONTINENCE
12. GLYCOSURIA
13. NEPHRITIS

UNIT X-G

THE URINARY SYSTEM

UNIT TEST

1. Match the terms on the right to their correct definitions using number answers.

_____ a. Urination

_____ b. Diffusion of a dissolved substance through a semipermeable membrane

_____ c. Instrument used for interior examination of urinary bladder and ureters

_____ d. Protein found in blood, may be present in urine in some disease conditions

_____ e. Involuntary bed-wetting in children over three years of age

_____ f. Transfer of tissue or organ from one person to another

_____ g. Chief nitrogenous constituent of urine, an end product of protein metabolism

_____ h. Tube for removing fluids from or injecting fluids into a body cavity, as the urinary bladder

_____ i. The spreading of molecules from a region of higher concentration to a region of lower concentration

_____ j. The elimination of waste products from the body

_____ k. Membrane that permits the free passage of some substances but restricts the passage of others

1. Albumin
2. Catheter
3. Cystocope
4. Dialysis
5. Diffusion
6. Enuresis
7. Excretion
8. Micturition
9. Semipermeable
10. Transplant
11. Urea

2. Point out the parts of the urinary system and of the external and internal anatomy of the kidney pictured on the accompanying pages

3. Cite the functions of the urinary system

   A.

   B.

   C.

4. Give the steps in urine formation by the kidneys

   A.

   B.

   C.

   D.

   E.

5. Summarize the characteristics of urine by answering the following questions:

   A. What is the approximate volume of urine produced in a 24-hour period?

   B. List seven possible components of urine.

      1.

      2.

      3.

      4.

      5.

      6.

      7.

6. Identify disorders of the urinary system by completing the following statements:

   A. A diminished amount of urine is ____________

B. The inability to retain urine is ____________

C. The presence of glucose in urine is ____________

D. An abnormal concretion within the body, as a kidney stone, is a (an) ____________

E. The condition in which body tissues contain an excessive amount of tissue fluid is ____________

F. Inflammation of the urethra is ____________

G. Severe inflammation of the kidneys (Bright's disease) is called ____________

H. Inflammation of the pelvis of the kidney is ____________

I. Painful urination is ____________

J. Inflammation of the bladder is ____________

K. Excessive secretion and discharge of urine is ____________

L. The condition in which nitrogenous waste normally excreted by the kidney are retained in the blood is ____________

M. A complete suppression of urine, or failure of kidney function is ____________

7. Discuss dialysis and transplants

A. Dialysis

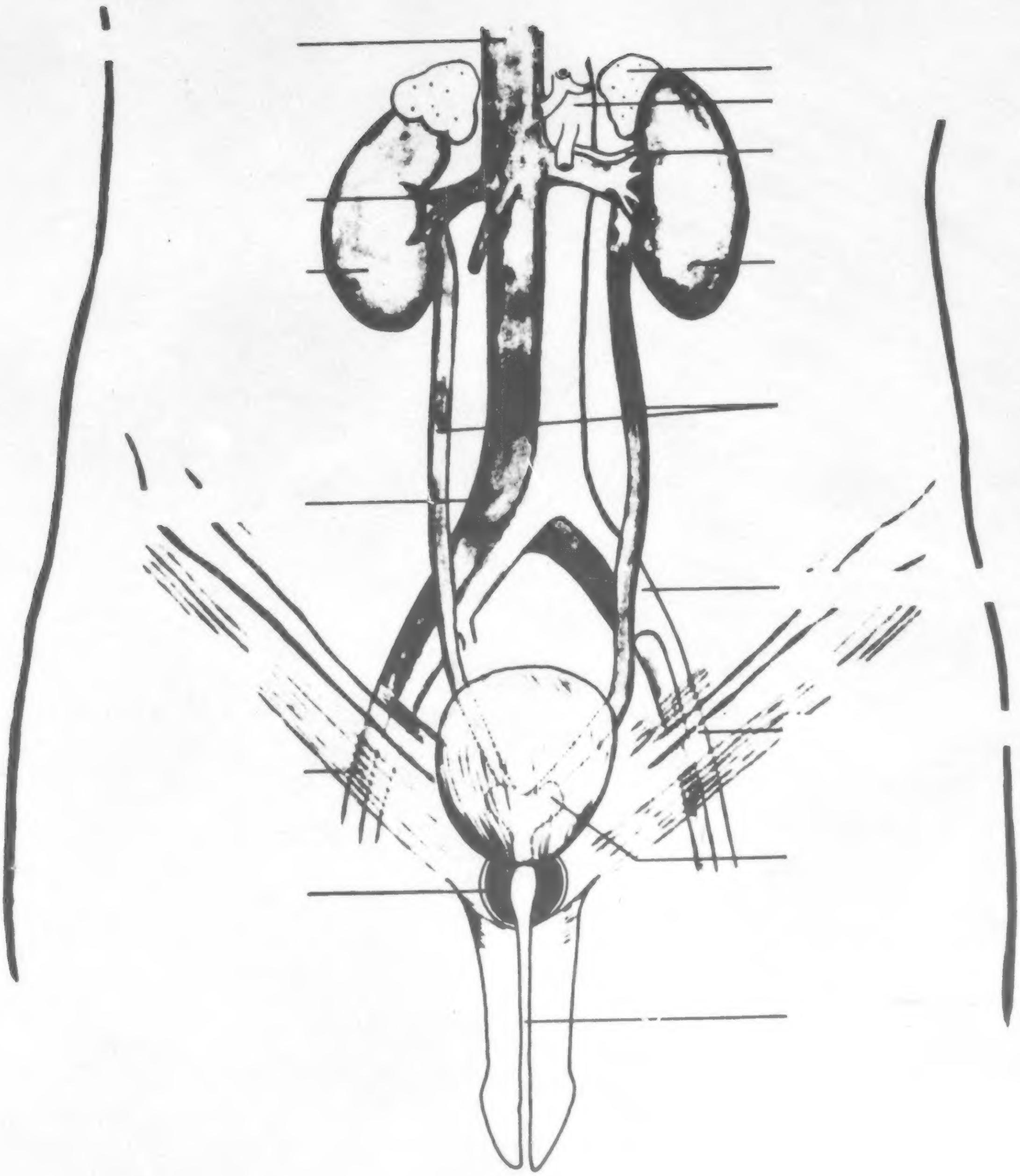
A. Dialysis (continued)

B. Transplants

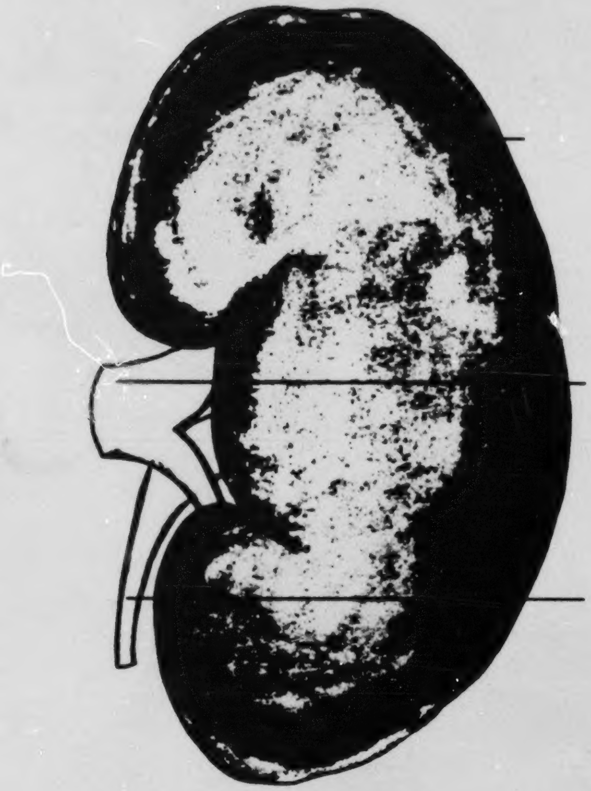
8. Label a diagram of the urinary system
9. Label a diagram depicting the anatomy of the kidney
10. Trace the steps in the formation of urine
11. Complete word scramble puzzle

(Note: If activities #8, #9, #10 and #11 have not been completed prior to the test, ask the instructor when they should be completed.)

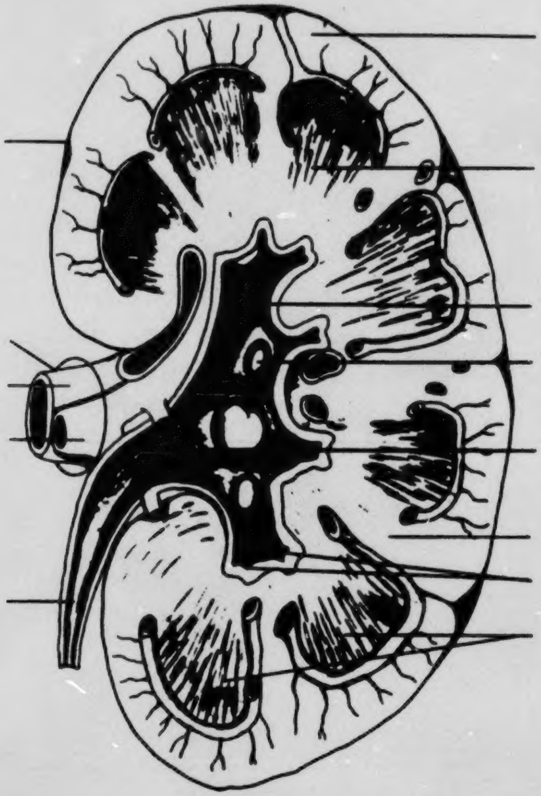
THE URINARY SYSTEM



EXTERNAL AND INTERNAL ANATOMY OF THE KIDNEY



672



673

X-G-22

UNIT X-G

THE URINARY SYSTEM

ANSWERS TO UNIT TEST

1. 8 a.
4 b.
3 c.
1 d.
6 e.
10 f.
11 g.
2 h.
5 i.
7 j.
9 k.

2. See TM-1 Diagram of the urinary system and
TM-2 Diagram of the external and internal anatomy of the kidney

3. A. Excretion of waste products form the blood

B. Regulation of the water balance of the body

C. Regulation of acid-base balance of the body

4. A. Blood flows to kidney by means of the renal artery

B. In the kidney, blood flows from the artery through progressively smaller vessels to the glomeruli

C. Water and solutes from the blood filter through the glomerular walls into Bowman's capsule, normally at the rate of 125 ml/minute.

D. This filtrate then flows into the convaluted tubules, the loop of Henle, and finally into the collecting tubules of the nephron

E. Approximately 97-99% of the water, and some of the solute from this filtrate are reabsorbed, re-enter the blood stream, and ultimately leave the kidney by way of the renal vein

F. The remainder of the filtrate is collected in collecting tubules. Then it flows into the pelvis of the kidney, leaves the kidney by means of the ureter, and is collected in the urinary bladder

G. Thus, the waste solutes and water are filtered from the blood by the kidney to form urine. The remaining solutes and water are returned to the circulating blood

5. A. 1500 ml.

B. 1. Water 95%

2. Nitrogenous wastes as urea, uric acid, ammonia and calatinine

3. Electrolytes as sodium, potassium, ammonia, chloride, bicarbonate, phosphate and sulphate

4. Toxins - during disease

5. Pigments

6. Hormones

7. Abnormal constituents as glucose, albumin, blood or calculi

6. A. Oliguria

B. Incontinence

C. Glycosuria

D. Calculus

E. Edema

F. Urethritis

G. Nephritis

H. Pyelitis

I. Dysuria

J. Cystitis

K. Polyuria

L. Uremia

M. Anuria

7. A. Dialysis

Dialysis is used to treat patients who have defective kidney function with a resulting accumulation of nitrogenous waste products in the blood

The patient's blood is passed through a cellophane spiral tube which is bathed in a solution of chemicals that approximate blood components

Waste from the patient's blood passes through the walls of the cellophane tube into the bath solution, thus cleansing the blood.

B. Transplants

Transplant procedures are most successful when the donor is closely related to the recipient.

The procedure is used for patients suffering from renal failure.

Problems in kidney transplants are:

Tissue rejection

Cause of damage to the original kidney may subsequently affect the transplanted kidney

The Living Bank is an organization that coordinates donations of organs.

8. Evaluated to the satisfaction of the instructor
9. Evaluated to the satisfaction of the instructor
10. Evaluated to the satisfaction of the instructor
11. Evaluated to the satisfaction of the instructor

UNIT X-H

*THE REPRODUCTIVE SYSTEM

UNIT OBJECTIVE

After completing this unit of instruction the student will be able to recognize terms relating to reproduction. The student will also be able to identify and give the function of the male and female reproductive parts, to discuss the menstrual cycle and pregnancy, and to identify common disorders of the reproductive system

SPECIFIC OBJECTIVES

After completing this unit of instruction, the student will be able to:

1. Match terms to definitions
2. Identify parts of the male and female reproductive system
3. Review the sequence of events in the menstrual cycle
4. Discuss the phases of pregnancy and parturition
5. Recognize disorders of pregnancy
6. Recognize disorders of the reproductive system
7. Identify the function of parts of the reproductive system
8. Recognize words associated with pregnancy and the menstrual cycle in a word scramble puzzle
9. Select, in a word-find puzzle, terms which are disorders of the reproductive system or pregnancy

*Reprinted with permission of Occupational Curriculum Laboratory, East Texas State University from Anatomy and Physiology Health Occupations Education, 1978.

UNIT X-H

THE REPRODUCTIVE SYSTEM

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide objective sheet

   B. Discuss objective sheet

   C. Pass out information sheet

   D. Discuss information sheet

   E. Distribute and discuss assignment sheets

   F. Use torso model, chart,or reference books to demonstrate parts of the reproductive system

   G. Give test and evaluate results

II. Student:

   A. Read and discuss objective sheet

   B. Participate in discussion of objective sheet

   C. Read information sheet

   D. Participate in discussion of information sheet

   E. Complete assignment sheets

   F. Observe or participate in demonstration of parts of the reproductive system using torso model, chart, or references

   G. Take test

INSTRUCTIONAL MATERIALS

I. Included in this unit:

- A. Objective sheet
- B. Information sheet
- C. Assignment sheets
  1. Assignment Sheet #1--Identification of Function of Parts of the Reproductive System
  2. Assignment Sheet #2--Word Scramble
  3. Assignment Sheet #3--Word Find Puzzle
- D. Answers to assignment sheets
- E. Test
- F. Answers to test

II. References: Books

A. Anderson, Paul D. Clinical Anatomy and Physiology for Allied Health Sciences. Philadelphia, Pennsylvania: W.B. Saunders, 1976.

B. Anthony, Catherine Parker and Irene B. Alyn. Structure and Function of the Body. 5th ed. St. Louis, Missouri: C.V. Mosby Company, 1976

C. Anthony, Catherine Parker and Norma Jane Kolthoff. Textbook of Anatomy and Physiology. 9th ed. St. Louis, Missouri: C.V. Mosby Company, 1975

D. Memmler, Ruth Lundeen and Dena Lin Wood. The Human Body in Health and Disease. 4th ed. Philadelphia, Pennsylvania: J.B. Lippincott Company, 1977.

UNIT X-H

THE REPRODUCTIVE SYSTEM

INFORMATION SHEET

I. Terms

A. Circumcision--surgical removal of all or part of the foreskin of the penis

B. Embryo--early or developing stage of any organism; in humans, the first weeks of uterine life

C. Episiotomy--incision of perineum at the end of the second stage of labor to avoid laceration of perineum and facilitate delivery

D. Fertilization--union of an ovum with a sperm cell to produce a zygote

E. Fetus--latter stages in developing child in uterus from about the third month of pregnancy to birth

F. Hermaphrodite--an individual with both male and female sex organs

G. Hysterectomy--surgical removal of the uterus

H. Mastectomy--surgical removal of the breast and axillary lymph modes, frequently done if patient has breast tumors

I. Menstruation--cyclic uterine bleeding which normally occurs at approximately four-week intervals in the absence of pregnancy. Controlled by hormones

J. Ovulation--periodic discharge of ovum from ovary

K. Papanicolaou stain--stain used in detection of cancer cells, particularly of cells from the vagina and cervix. **(Refers also to pap smear.)**

L. Reproduction--process by which offspring are produced

M. Semen--secretion of reproductive organs of the male containing sperm cells and secretions from accessory reproductive glands

N. Spermatazoan--male reproductive cell (sperm cell)

O. Vasectomy--surgical procedure resulting in sterilization of males. A portion of the ductus deferens on each side is removed, thus preventing sperm cells from reaching the urethra

P. Zygote--Cell produced by the union of an egg cell with a sperm cell

II. Parts of the reproductive system

A. Female parts

1. Ovaries--Primary reproductive organs of female; found in upper part of pelvic cavity, one on each side of uterus, produce ova
2. Ovum--Female sex cell, produced in ovaries
3. Fallopian tube (uterine tube)--duct leading from point near the ovaries to the uterus. Transports ovum from body cavity to uterus
4. Fimbriae--fringelike extensions from the fallopian tubes. When an ovum is released the fimbriae work like tentacles to draw the ovum into the uterine tube.
5. Uterus--Organ for containing and nourishing the embryo during pregnancy
6. Vagina--Muscular tube connecting uterus with exterior of body
7. Bartholin's glands (vulvovaginal glands)--glands above and to each side of the vaginal opening. Produce mucus.
8. Vulva--External parts of female reproductive system
9. Perineum--Pelvic floor (commonly used to mean the area between vaginal opening and anus)

B. Male

1. Scrotum--Sac containing the testes

2. Penis--Male organ of sexual intercourse

3. Testes--Male reproductive glands, produce sperm cells and secrete male sex hormones

4. Epididymis--Tube inside testes in which sperm cells are collected and stored until they mature and become motile

5. Ductus deferens (vas deferens)--continuation of epididymis extending to juncture with the seminal vesicle

6. Seminal vesicle--Tubes extending from the area back of urinary bladder to the ductus deferens. Secretes mucoid substance which nourishes sperm cells

7. Prostate gland--Surrounds neck of bladder and urethra. Ducts open into prostatic portion of urethra - produces fluid which is a constituent of semen that helps maintain motility of spermatozoa

8. Ejaculatory ducts--Terminal portion of seminal duct, formed by union of ductus deferens and excretory duct of seminal vesicle

9. Cowper's glands (bulbourethral)--Pair of glands found beneath the bulb of the urethra, produce mucous secretion

10. Sperm cell--Male reproductive cell

III. Menstrual cycle

A. Changes in female hormone secretions occur in a 28-day cycle

B. Ovulation occurs at about the middle of each 28 day period

C. Uterine wall prepares for implantation of fertilized ovum (zygote)

D. If fertilization does not occur, the lining of the uterine wall sloughs off, and is expelled.

E. The loss of lining leaves some areas bleeding; thus blood is also discharged from uterus

F. After 4-7 days, the uterine wall begins to prepare again for pregnancy

G. Menstruation usually begins in females from ages 10-16 years and indicates production of ova

H. Menopause is stage at which menstrual cycle ceases; usually occurs between ages of 45-50

I. Menstrual cycle is controlled by hormones

IV. Pregnancy

A. Fertilization normally occurs when the ovum is about one-third of the way down the fallopian tube. The fertilized egg continues the passage down the tube until it reaches the uterus.

B. Six to eight days after fertilization the zygote becomes implanted in uterine wall.

C. The formation of the placenta begins after implantation. The placenta functions in the exchange of food, gases and wastes between mother and baby. The placenta is the oval or discoid spongy structure in the uterus through which the fetus derives its nourishment.

D. The placenta also serves as barrier against bacteria between mother and baby. Blood-borne diseases such as syphilis and some viruses may affect the fetus. Antibodies are transmitted from mother to embryo and fetus.

E. Duration of pregnancy

1. 280 days

2. To calculate date for delivery - add one year and seven days to date of last menstrual period and subtract three months

F. Parturition - Process of giving birth to a child; labor

1. Stages of labor

a. First stage of labor - regular uterine contractions, rupture of membrane, complete dilation of cervix of uterus

        - b. Second stage - extends from complete dilation to delivery of infant. Episiotomy prevents tearing of perineum
        - c. Delivery of placenta
    - 2. Mechanism of initiating labor results from hormonal balance and timing; actual process is poorly understood

V. Disorders of pregnancy

- A. Ectopic pregnancy--Fertilized ovum is implanted at a site other than the uterine cavity as in the fallopian tube
- B. Abortion--Loss of embryo or fetus during the first 20 weeks of pregnancy
    - 1. Spontaneous abortion--Abortion that occurs without having been induced
    - 2. Induced abortion--Termination of pregnancy by artificial means
        - a. Criminal abortion-abortions performed illegally
        - b. Therapeutic abortion-abortions performed by physicians for a variety of reasons
- C. Miscarriage--Loss of fetus between 20 and 28 weeks of preganancy
- D. Placenta previa--Abnormal condition in which the placenta is attached to the lower part of the uterus
- E. Abruptio placenta - premature detachment of a normally situated placenta.

VI. Disorders of the reproductive system

- A. Amenorrhea - Absence of menstrual flow
- B. Cryptorchidism - Failure of testes to descend into the scrotum
- C. Dysmenorrhea - Painful menstruation
- D. Gonorrhea - Venereal disease caused by a bacterium. Characterized by purulent urethral discharge

E. Hermaphroditism - Both male and female sex organs found in the same person. No known case in which this condition has resulted in fertility, either as male or female

F. False hermaphroditism--Genitalia of one sex evident, secondary sex characteristics of opposite sex predominate

G. Inguinal hernia--Rupture in abdominal wall, in region of wall where testes decend from abdomen into scrotum

H. Leukorrhea--Vaginal discharge

I. Orchitis--Inflammation of the testes due to trauma, mumps, or other infection

J. Phimosis--Tightness of foreskin of penis - remedied by circumcision

K. Prostatism--Any condition resulting in obstruction of the prostate gland with accompanying retention of urine in the bladder

L. Salpingitis--Inflammation of fallopian tubes

M. Sterility--Inability to reproduce

N. Syphilis--Infectious venereal disease characterized by lesions which may involve any organ or tissue

O. Tumor--Swelling or enlargement; may occur in any part of the reproductive system; common in breast. May be benign or malignant.

UNIT X-H

THE REPRODUCTIVE SYSTEM

ASSIGNMENT SHEET #1--IDENTIFICATION OF FUNCTION OF PARTS OF THE REPRODUCTIVE SYSTEM

Directions: The functions of various parts of the reproductive system are given below. Using the information sheet, place the name of the indicated part in the blank spaces.

1. Glands that produce mucus, located above and to each side of the vaginal opening ____________ 1.
2. Sac containing male gonads ____________ 2.
3. Tube inside testis in which sperm cells are collected and stored until they mature and become motile ____________ 3.
4. Pelvic floor (commonly used to mean the area between vaginal opening and anus) ____________ 4.
5. External parts of the female reproductive system ____________ 5.
6. Male reproductive glands, produce sperm cells and secrete male hormones ____________ 6.
7. Gland that surrounds the neck of the bladder and urethra. Ducts open into prostatic portion of urethra, produces fluid which is a constituent of semen and that helps to maintain motility of sperm cells ____________ 7.
8. Fringelike extensions from the abdominal openings of the fallopian tubes ____________ 8.
9. Female sex cell ____________ 9.
10. Male sex cell ____________ 10.

11. Muscular tube connecting the uterus with the exterior of the body ____________ 11.

12. Male organ of sexual intercourse ____________ 12.

13. Continuation of the epididimis extending to the juncture with the seminal vesicle ____________ 13.

14. Primary reproductive organs of the female that produce ova ____________ 14.

15. Organ for containing and nourishing the embryo during pregnancy ____________ 15.

16. Duct leading from point near ovaries to the uterus, transports ovum from body cavity to uterus ____________ 16.

17. Pair of glands found beneath bulb of urethra, produce a mucous secretion ____________ 17.

18. The terminal portion of the seminal duct formed by the union of the ductus deferens and the excretory duct of the seminal vesicle ____________ 18.

19. Tubes extending from the area of the urinary bladder to the ductus deferens. Secretes a mucoid substance which nourishes sperm cells ____________ 19.

UNIT X-H

THE REPRODUCTIVE SYSTEM

ASSIGNMENT SHEET #2--WORD SCRAMBLE

Directions: Unscramble the letters below to form words associated with pregnancy and the menstrual cycle

1. CLAPTENA _ _ _ _ _ _ _ _
2. IZOFRETAITNLI _ _ _ _ _ _ _ _ _ _ _ _ _
3. GYZTEO _ _ _ _ _ _
4. VOUM _ _ _ _
5. TSUREU _ _ _ _ _ _
6. STUREMNTANIO _ _ _ _ _ _ _ _ _ _ _ _
7. PUANEMSOE _ _ _ _ _ _ _ _ _
8. MHNOERN _ _ _ _ _ _ _
9. CYNAGRPEN _ _ _ _ _ _ _ _ _
10. TARPRUINIOT _ _ _ _ _ _ _ _ _ _ _

UNIT X-H

THE REPRODUCTIVE SYSTEM

ASSIGNMENT SHEET #3--WORD FIND PUZZLE

Directions: The following terms, which are disorders of the reproductive system and of pregnancy, can be found in the puzzle. They may be written forward, backward, vertically, horizontally or diagonally. Circle each term as you find it.

Abortion

Amenorrhea

Cryptorchidism

Dysmenorrhea

Ectopic pregnancy

Gonorrhea

Hermaphroditism

Inguinal hernia

Leukorrhea

Miscarriage

Orchitis

Phimosis

Placenta previa

Prostatism

Salpingitis

Sterility

Syphilis

Tumor

UNIT X-H

THE REPRODUCTIVE SYSTEM

ASSIGNMENT SHEET #3--WORD FIND PUZZLE

Y	A	I	N	R	E	H	L	A	N	I	U	G	N	I
C	O	S	V	A	W	T	B	Q	U	A	S	H	R	T
N	L	E	U	K	O	R	R	H	E	A	I	E	S	O
A	L	S	I	S	O	M	I	H	P	B	T	R	T	P
N	M	E	G	A	I	R	R	A	C	S	I	M	S	R
G	G	O	N	O	R	R	H	E	A	T	H	A	T	M
E	H	P	M	P	O	S	A	B	T	O	C	P	E	S
R	I	R	N	N	P	T	B	U	U	P	R	H	F	I
P	J	S	E	O	J	U	M	V	V	S	O	R	G	T
C	K	M	F	P	K	O	N	O	I	T	R	O	B	A
I	A	E	H	R	R	O	N	E	M	S	Y	D	C	T
P	L	A	C	E	N	T	A	P	R	E	V	I	A	S
O	M	B	D	F	Y	T	I	L	I	R	E	T	S	O
T	S	Y	P	H	I	L	I	S	J	S	F	I	T	R
C	R	Y	P	T	O	R	C	H	I	D	I	S	M	P
E	S	A	L	P	I	N	G	I	T	I	S	M	N	O

UNIT X-H

THE REPRODUCTIVE SYSTEM

ANSWERS TO ASSIGNMENT SHEETS

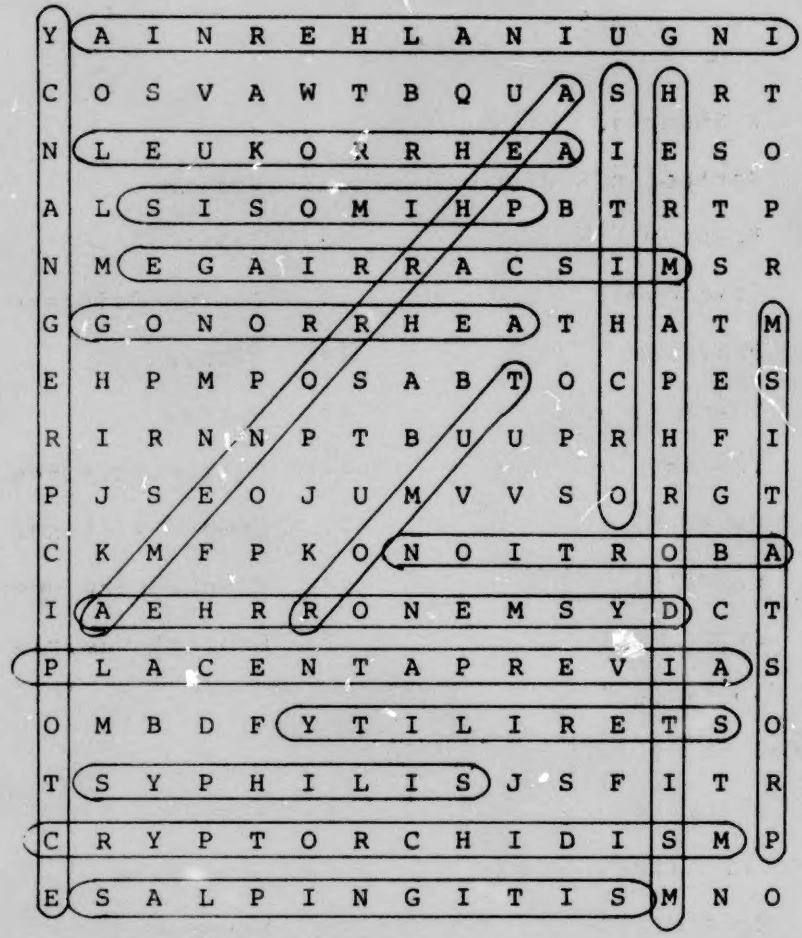
Assignment Sheet #1

1. Bartholin's gland
2. Scrotum
3. Epididymis
4. Perineum
5. Vulva
6. Testes
7. Prostate
8. Fimbriae
9. Ovum
10. Sperm cell
11. Vagina
12. Penis
13. Ductus deferens
14. Ovaries
15. Uterus
16. Fallopian tubes
17. Cowper's glands
18. Ejaculatory duct
19. Seminal vesicle

Assignment Sheet #2

1. Placenta
2. Fertilization
3. Zygote
4. Ovum
5. Uterus
6. Menstruation
7. Menopause
8. Hormone
9. Pregnancy
10. Parturition

Answer to Assignment Sheet #3



Y	A	I	N	R	E	H	L	A	N	I	U	G	N	I
C	O	S	V	A	W	T	B	Q	U	A	S	H	R	T
N	L	E	U	K	O	R	R	H	E	A	I	E	S	O
A	L	S	I	S	O	M	I	H	P	B	T	R	T	P
N	M	E	G	A	I	R	R	A	C	S	I	M	S	R
G	G	O	N	O	R	R	H	E	A	T	H	A	T	M
E	H	P	M	P	O	S	A	B	T	O	C	P	E	S
R	I	R	N	N	P	T	B	U	U	P	R	H	F	I
P	J	S	E	O	J	U	M	V	V	S	O	R	G	T
C	K	M	F	P	K	O	N	O	I	T	R	O	B	A
I	A	E	H	R	R	O	N	E	M	S	Y	D	C	T
P	L	A	C	E	N	T	A	P	R	E	V	I	A	S
O	M	B	D	F	Y	T	I	L	I	R	E	T	S	O
T	S	Y	P	H	I	L	I	S	J	S	F	I	T	R
C	R	Y	P	T	O	R	C	H	I	D	I	S	M	P
E	S	A	L	P	I	N	G	I	T	I	S	M	N	O

UNIT X-H

THE REPRODUCTIVE SYSTEM

UNIT TEST

1. Match the terms relating to the reproductive system to the correct definition using number answers.

_____ a. Surgical removal of the breast and axillary lymph nodes

_____ b. Stain used in detection of cancer cells, particularly cells from vagina and cervix

_____ c. Cell produced by the union of an egg cell with a sperm cell

_____ d. Male reproductive cells

_____ e. Cyclic uterine bleeding which normally occurs at approximately four-week intervals in the absence of pregnancy. Controlled by hormones

_____ f. Surgical removal of all or part of the foreskin of the penis

_____ g. Child in uterus at about the third month of pregnancy to birth

_____ h. Secretion of reproductive organs of the male containing sperm cells and secretions from accessory reproductive glands

_____ i. Surgical procedure resulting in sterilization of males. A portion of the ductus deferens on each side is removed, thus preventing sperm cells from reaching the urethra

1. Circumcision
2. Embryo
3. Episiotomy
4. Fertilization
5. Fetus
6. Hermaphrodite
7. Hysterectomy
8. Mastectomy
9. Menstruation
10. Ovulation
11. Papinicolaou stain
12. Reproduction
13. Semen
14. Spermatazoa
15. Vasectomy
16. Zygote

_____ j. An individual with both male and female sex organs

_____ k. Early or developing stage of any organism; in humans, the first weeks of uterine life

_____ l. Process by which offspring are produced

_____ m. Incision of perineum at end of second stage of labor to avoid laceration of perineum and facilitate delivery

_____ n. Surgical removal of the uterus

_____ o. Union of an ovum with a sperm cell to produce a zygote

_____ p. Periodic discharge of ovum from ovary

2. Identify the parts of the male and female reproductive system by completing the following statements:

a. The muscular tube connecting the uterus with the exterior of the body is the _____________a.

b. A female sex cell is a (an) _____________b.

c. Male reproductive glands that produce sperm cells and secrete male sex hormones are _____________c.

d. The terminal portion of the seminal duct formed by the union of the ductus deferens and the excretory duct of the seminal vesicle is the _____________d.

e. The gland that surrounds the neck of the bladder and urethra, the ducts open into the prostatic portion of the urethra, is the _____________e.

f. A male reproductive cell is a (an)_____________f.

g. The external parts of the female reproductive system are called the ______________g.

h. The pelvic floor, commonly used to mean the area between the vaginal opening and the anus is the ______________h.

i. The continuation of the epididymis extending to the juncture with the seminal vesicle is the ______________i.

j. The sac containing the testes is the ______________j.

k. The organ for containing and nourishing the embryo during pregnancy is the ______________k.

l. The primary reproductive organs of the female which produce ova are the ______________l.

m. The glands found above and to each side of the vaginal opening which produce mucus are the ______________m.

n. The pair of glands found beneath the bulb of the urethra; they produce a mucous secretion, are ______________n.

o. The tube inside the testis in which sperm cells are collected and stored until they mature and become motile is the ______________o.

p. The male organ of sexual intercourse is the ______________p.

q. The fringelike extensions from the edges of the abdominal openings of the fallopian tubes are the ______________q.

r. The ducts (tube) that transport ova from the body cavity to the uterus are the ______________r.

s. The tubes extending from the area back of the urinary bladder to the ductus deferens, which secrete a mucoid substance that nourishes sperm cells are the ____________s.

3. Review the sequence of events in the menstrual cycle, by answering the following questions. Use short answers, i.e., phrases, words, or simple sentences:

a. How many days are required to complete the menstrual cycle?

b. When in the menstrual cycle does ovulation occur?

c. What part of the uterus prepares for implantation of the zygote?

d. What becomes of the lining of the uterine wall if fertilization does not occur?

e. Why is blood discharged from the uterus?

f. After 4-7 days, what does the uterine wall prepare for?

g. What does the beginning of menstruation indicate?

h. What is the menopause?

i. What controls the menstrual cycle?

4. The following statements pertain to the discussion of pregnancy and parturition.

If the statement is true, write the word true in the blank space provided, if false write the word false.

_______ a. Fertilization normally occurs when the ovum is about one-third of the way down the fallopian tube.

_______ b. The zygote becomes implanted six to eight days after fertilization.

_______ c. The wall of the fallopian tube functions in the exchange of food, gases and wastes between mother and baby.

_______ d. No diseases from the mother may affect the baby.

_______ e. Pregnancy in humans normally lasts 180 days.

_______ f. Parturition is the process of giving birth to a child, or labor.

_______ g. The first stage of labor is characterized by regular uterine contractions, rupture of membranes and a complete dilation of the cervix of the uterus.

_______ h. In the second stage of labor the placenta is delivered.

_______ i. In the third stage of labor the infant is actually delivered.

_______ j. The initiation of labor results from hormonal balance and timing.

5. Complete the following statements using the disorders of pregnancy listed below:

Ectopic pregnancy

Spontaneous abortion

Induced abortion

Criminal abortion

Therapeutic abortion

Miscarriage

Placenta previa

a. The loss of a fetus between 20 and 28 weeks of pregnancy is a (an) ____________

b. An abortion performed by a physician for a variety of reasons is a (an) ____________

c. The abnormal condition in which the placenta is attached to the lower part of the uterus ____________

d. Abortions performed illegally are ____________

e. The condition in which the fertilized ovum is implanted at a site other than the uterine cavity is called a (an) ____________

f. An abortion that occurs without having been induced is a (an) ____________

g. The termination of pregnancy by artificial means is called ____________

6. Identify disorders of the reproductive system by matching the disorders with their identifying phrases using number answers.

_____ a. Inability to reproduce

_____ b. Swelling or enlargement, may occur in any part of the reproductive system

_____ c. Painful menstruation

_____ d. Rupture in abdominal wall in region of wall where testes descended from abdomen into scotum

_____ e. Genitalia of one sex evident, secondary sex characteristics of opposite sex predominate

_____ f. Inflammation of the fallopian tubes

_____ g. Vaginal discharge

1. Amenorrhea
2. Cryptorchidism
3. Dysmenorrhea
4. Gonorrhea
5. Hermaphroditism
6. False hermaphroditism
7. Inguinal hernia
8. Leukorrhea
9. Orchitis
10. Phimosis

_____ h. Absence of menstrual flow

_____ i. Venereal disease caused by a bacterium, characterized by purulent urethral discharge

_____ j. Tightness of foreskin of penis, remedied by circumcision

_____ k. Both male and female sex organs found in the same person

_____ l. Inflammation of the testes due to trauma, mumps, or other infection

_____ m. Infectious venereal disease characterized by lesions which may involve any organ or tissue

_____ n. Any condition resulting in obstruction of the prostate gland with accompanying retention of urine in the bladder

_____ o. Failure of the testes to descend into the scrotum

11. Prostatism

12. Salpingitis

13. Sterility

14. Syphilis

15. Tumor

7. Identify the function of parts of the reproductive system.

8. Recognize words associated with pregnancy and the menstrual cycle in a word scramble puzzle.

9. Select terms which are disorders of the reproductive system and pregnancy in a word-find puzzle.

(NOTE: If activities #7-#9 have not been completed prior to the test, ask the instructor when they should be completed.)

UNIT X-H

THE REPRODUCTIVE SYSTEM

ANSWERS TO UNIT TEST

1. 8 a.
   11 b.
   16 c.
   14 d.
   9 e.
   1 f.
   5 g.
   13 h.
   15 i.
   6 j.
   2 k.
   12 l.
   3 m.
   7 n.
   4 o.
   10 p.

2. a. Vagina
   b. Ovum
   c. Testes
   d. Ejaculatory ducts
   e. Prostate
   f. Sperm cell
   g. Vulva
   h. Perineum
   i. Ductus deferens
   j. Scrotum
   k. Uterus
   l. Ovaries
   m. Bartholin's glands
   n. Cowper's glands
   o. Epididymis
   p. Penis
   q. Fimbriae
   r. Fallopian tubes
   s. Seminal vesicles

3. a. 28 days
   b. about the middle of the 28 day cycle
   c. uterine wall
   d. sloughs off and is expelled

e. the loss of the uterine lining leaves some areas bleeding, thus blood is also discharged

f. begins to prepare again for pregnancy

g. production of ova

h. stage at which the menstural cycle ceases

i. hormones

4. True a.

True b.

False c.

False d.

False e.

True f.

True g.

False h.

False i.

True j.

5. a. miscarriage

b. therapeutic abortion

c. placenta previa

d. criminal abortion

e. ectopic pregnancy

f. spontaneous abortion

g. induced abortion

6. 13 a.

15 b.

3 c.

7 d.

6 e.

12 f.

8 g.

1 h.

4 i.

10 j.

5 k.

9 l.

14 m.

11 n.

2 o.

7. Evaluated to the satisfaction of the instructor.

8. Evaluated to the satisfaction of the instructor.

9. Evaluated to the satisfaction of the instructor.

UNIT X-I

*ENDOCRINE GLANDS

UNIT OBJECTIVE

After completing this unit, the student will be able to identify terms relative to the endocrine system, locate the endocrine glands, and name and give the function of hormones. The student also will be able to identify disorders of the endocrine system. This knowledge will be evidenced through demonstration and by satisfactorily completing a unit test.

SPECIFIC OBJECTIVES

After completing this unit of instruction, the student will be able to:

1. Match terms with definitions
2. Cite five general functions of hormones
3. Identify the hormones produced by the pituitary gland
4. Locate and discuss the function of the thyroid gland
5. Locate the parathyroid glands and name and give the function of the hormone produced
6. Identify the hormones produced by the adrenal gland
7. Discuss the hormones produced in the pancreas
8. List the hormones produced by the testes and ovaries and give their function
9. Summarize the endocrine activity of the placenta, the pineal gland, and the thymus gland
10. Recognize the names and descriptions of endocrine disorders
11. Locate the endocrine glands in a diagram
12. Complete a chart of the endocrine glands, hormones, and their function
13. Identify endocrine glands in relation to disease

*Reprinted with permission of Occupational Curriculum Laboratory, East Texas State University from Anatomy and Physiology Health Occupations Education, 1978.

UNIT X-I

ENDOCRINE GLANDS

SUGGESTED ACTIVITIES

I. Instructor

  A. Provide objective sheet

  B. Discuss objective sheet

  C. Pass out information sheet

  D. Discuss information sheet

  E. Make and show transparencies

  F. Distribute and discuss assignment sheets

  G. Use torso model or chart of endocrine system to locate endocrine glands

  H. Give test and evaluate results

II. Student

  A. Read objective sheet

  B. Discuss objective sheet

  C. Read material contained in information sheet

  D. Discuss information sheet

  E. Complete assignment sheets

  F. Observe or participate in use of model or chart to locate endocrine glands

  G. Take test

INSTRUCTIONAL MATERIALS

I. Included in this unit

  A. Objectives

  B. Information Sheet

C. Transparency masters

1. TM-1--The Endocrine Glands

2. TM-2--Endocrine Glands, Hormones, and Their Functions

D. Assignment Sheets

1. Assignment Sheet #1--Label Diagram of Endocrine Glands

2. Assignment Sheet #2--Completion of Chart of Endocrine Glands, Hormones, and Their Functions

3. Assignment Sheet #3--Identification of Endocrine Glands in Relation to Diseases

E. Answers to Assignment sheets

F. Test

G. Answers to test

II. References: Books

A. Anderson, Paul D. Clinical Anatomy and Physiology for Allied Health Sciences. Philadelphia, Pennsylvania: W.B. Saunders, 1976.

B. Anthony, Catherine Parker and Irene B. Alyn. Structure and Function of the Body. 5th ed. St. Louis, Missouri: C.V. Mosby Company, 1976.

C. Anthony, Catherine Parker and Norma Jane Kolthoff Textbook of Anatomy and Physiology. 9th ed. St. Louis, Missouri: C.V. Mosby Company, 1975.

D. Memmler, Ruth Lundeen and Dena Lin Wood. The Human Body in Health and Disease. 4th ed. Philadelphia, Pennsylvania: J.B. Lippincott Company, 1977.

UNIT X-I

ENDOCRINE GLANDS

INFORMATION SHEET

I. Terms and definitions

  A. Endocrine gland (ductless gland)--A gland, the secretion of which is liberated directly into the blood stream rather than by means of a duct

  B. Exocrine gland--A gland that liberates a secretion by means of a duct

  C. Glycogen--Carbohydrate compound stored in animal cells

  D. Hormone--The secretion of the ductless glands which regulates the function of other organs

  E. Iodine--Chemical element needed for the development and functioning of the thyroid gland

  F. Lactation--The secretion of milk

  G. Lymphocyte--Type of white blood cell produced in lymph glands

  H. Melanin--Pigment which gives color to hair and skin

  I. Resorption--To dissolve and assimilate: to absorb again

  J. Secondary sex characteristics--Sex characteristics that are not directly concerned with reproduction, as tone of voice, facial hair, and breast development

II. General functions of hormones

  A. Regulation of metabolism (energy utilization)

  B. Regulation of growth and development

  C. Regulation of reproduction

  D. Regulation of stress response

  E. Regulation of cell permeability

III. Pituitary gland (hypophysis) located at undersurface of the brain, protected by bones of skull, divided into anterior and posterior lobes

A. Hormones produced by anterior pituitary

1. Thyrotropin (TSH)--Controls function of thyroid gland

2. Adrenocorticotropin (ACTH)--Regulates secretion of cortex of adrenal gland

3. Somatotropin or growth promoting hormone (STH)--Regulates skeletal growth. Deficiency may result in dwarfism; excess in young may result in giantism; in adults, in acromegaly.

4. Follicle-stimulating hormone or gonadotropic hormone (FSH)--Controls development of reproductive systems in males and females.

5. Lactogenic hormone (LTH)--Promotes production of milk in mammary glands and general development of breasts during pregnancy.

6. Interstitial cell-stimulating hormone (ICSH)--Regulates the secretion of male sex hormone testosterone in the testes. Interstitial cell stimulating hormone and testosterone together control the development of masculine secondary sex characteristics

7. Luteinizing hormone (LH)--Stimulates ovulation and formation of corpus luteum at site of ruptured ovarian follicle

8. Melanocyte stimulating hormone (MSH)--Regulates deposition of melanin in skin, providing pigmentation

B. Hormones produced by posterior pituitary

1. Oxytocin--Promotes generalized contraction of smooth muscles, particularly the uterus in late pregnancy.

2. Vasopresin--

    a. Regulates water retention by kidneys. Deficiency may result in diabetes insipidus

   - b. Can produce mild increase in blood pressure as a vasoconstrictor

IV. Thyroid gland--located just below larynx in neck, consists of right and left lobes connected by an isthmus that lies on the upper trachea

- A. Principal hormone is thyroxine, which regulates metabolism; thus the production of energy in cells
- B. Thyroid requires iodine in diet in order to produce thyroxine
- C. Hypothyroidism--Deficiency of thyroxine
  - 1. At birth, results in cretinism
  - 2. In adults, results in myxedema
- D. Hyperthyroidism--Excess of thyroxine
  - 1. Grave's disease (exophthalmic goiter)
  - 2. Simple goiter
- E. Tests for thyroid function
  - 1. Basal metabolism test (BMR)--determination of amount of oxygen a person uses under basal conditions
  - 2. Protein bound iodine test (PBI)--determination of amount of iodine in blood
  - 3. Use of radio-active iodine to determine thyroid function

V. Parathyroid glands--Two pairs, lie on lobes of thyroid gland

- A. Secrete parathormone
- B. Regulate calcium metabolism
  - 1. Deficiency of parathormone results in muscle spasms and convulsions called tetany
  - 2. Excess of parathormone causes calcium to leave bones, causing them to become soft and easily bent

VI. Adrenal glands--One pair, located above each kidney

- A. Cortex--Outer part of adrenal gland

1. Hormones secreted
    a. Aldosterone--Regulates control of resorption of sodium in kidney tubules and excretion of potassium; e.g. electolyte regulation
    b. Cortisol (cortisone)--Maintains carbohydrate reserve of body by changing amino acids to sugar instead of protein, when needed by body
    c. Adrenosterone--Governs secondary sex characteristics
2. Production of these hormones from the adrenal cortex is stimulated by ACTH from the pituitary
3. Deficiency of secretion of cortex results in Addision's disease
4. Oversecretion results in Cushing's disease

B. Medulla--Inner area of the adrenal glands
1. Secretes hormones epinephrine (adrenalin and norepinephrine which are closely related
2. Functions of hormones
    a. Elevate blood pressure by accelerating heart rate and by vasoconstriction
    b. Promote breakdown of glycogen to glucose, thus increasing blood sugar concentration
    c. Cause dilation of bronchioles through relaxation of smooth muscles

VII. Pancreas--Lies close to posterior wall of abdomen behind the stomach

A. Exocrine function -- to secrete digestive enzymes

B. Endocrine function--Carried on by areas of specialized tissue in pancreas called "Islets of Langerhans"
1. Hormones secreted are insulin and glucagon
2. Functions of insulin

            a. Regulates rate of glucose metabolism

            b. Regulates blood glucose concentration

        3. Deficiency of insulin results in diabetes mellitus

        4. Increased insulin production (hyperinsulinism) may result in insulin shock

        5. Glucagon--Controls rate at which liver changes glycogen to glucose

VIII. Sex glands

- A. Male (testes)--Produce hormone testosterone
    1. Regulates development of male secondary characteristics
    2. Influences development, maintenance, and function of reproductive organs
- B. Female (ovaries)--Produce the hormones estrogen and progesterone
    1. Estrogen regulates the development and maintenance of the female reproductive system, and the development of female secondary sex characteristics
    2. Progesterone assists in normal development in pregnancy

IX. Other hormone-producing organs

- A. Placenta
    1. Produces hormones that cause changes in the uterine lining, and prepares breast for lactation
    2. Pregnancy tests are based on presence of placental hormones
- B. Pineal gland--Located in cranial cavity at about the middle of the brain
    1. Function in humans controversial
    2. The hormone, melatonin, is produced in some animals

C. Thymus gland--Located in chest in front of the aorta and behind the sternum

1. Most active during prenatal life and in infancy

2. Produces hormones that stimulate the production of small lymphocytes

3. Secretes thymosin (thymic hormone) which promotes growth of lymph tissue

X. Disorders of the endocrine glands

A. Acromegaly--Disease of adults that results from hyperactivity of anterior pituitary; characterized by widening of the bones of the hands, face, and feet

B. Dwarfism--Disease that results from a deficiency of the somatotropic hormone produced by the anterior pituitary. The patient is abnormally short or undersized.

C. Giantism--Disease that results from hyperactivity of the anterior pituitary in childhood, causing abnormal tallness

D. Diabetes insipidus--Disease in which a deficiency of vasopresin of the posterior pituitary prevents reabsorption of water by renal tubules. This leads to the excretion of large volumes of urine.

E. Diabetes mellitus--Disease that results from a lack of insulin. Glucose is not utilized by the body but is excreted in the urine.

F. Hyperinsulinism--Condition in which there is an excess of insulin in the blood. This may be due to the overactivity of the Islets of Langerhans or the treatment of diabetes mellitus if more insulin is given than needed.

G. Cretinism--Condition in which there is a serious lack of thyroid activity from infancy. The patient becomes dwarfed and mentally deficient.

H. Myxedema--Hypothyroidism in adults. The patient is mentally and physically sluggish, skin and hair are dry, tissues of face swell.

I. Goiter--Enlargement of the thryoid gland

   1. Simple goiter--Goiter which results from a deficiency of iodine in the diet. The thyroid gland enlarges in an effort to compensate for lack of iodine.

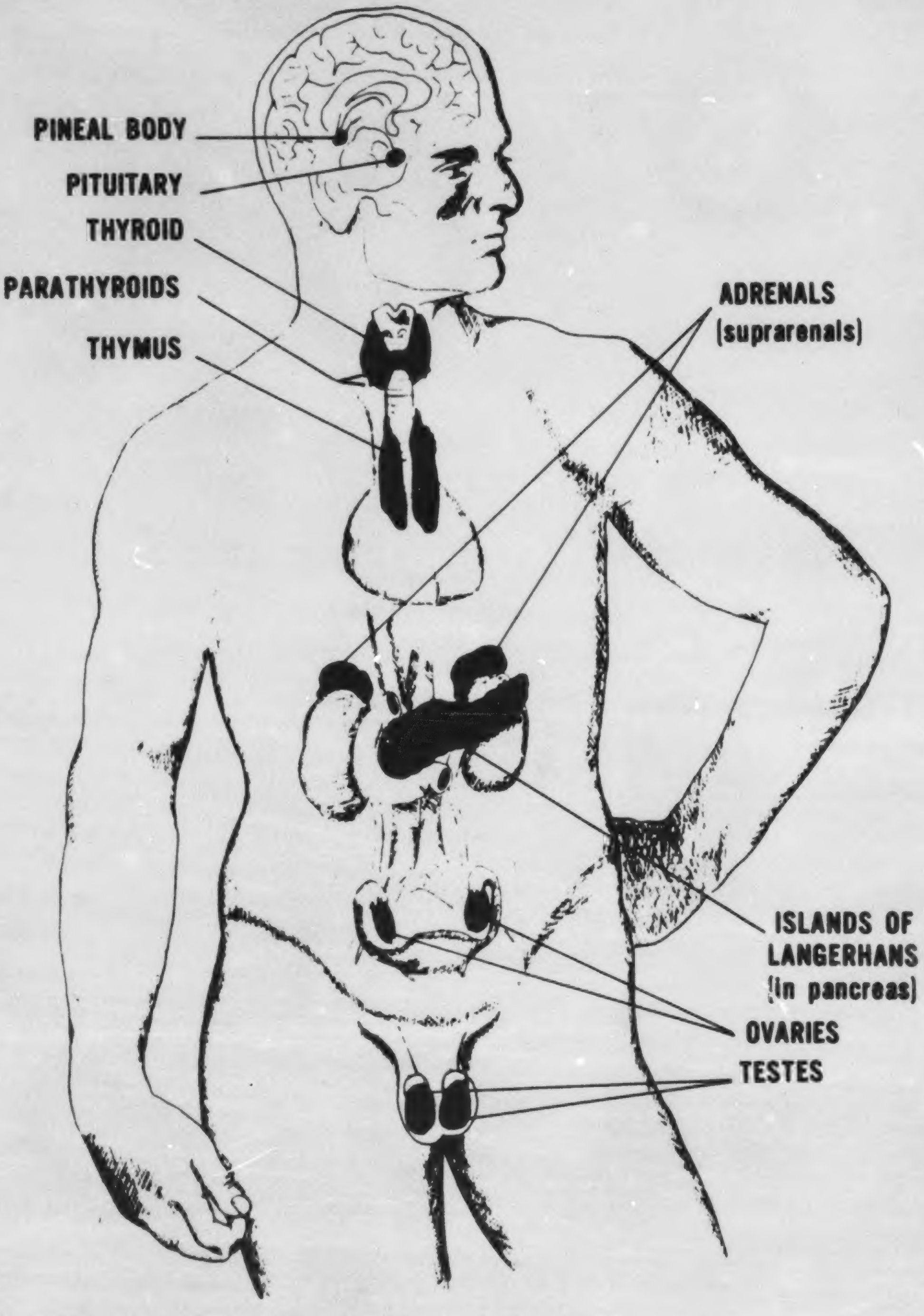
   2. Exophthalmic goiter (Graves' disease)--Disease characterized by presence of a goiter, bulging of the eyes, strained appearance of face, intense nervousness, weight loss, rapid pulse, sweating and tremor, and a rapid metabolic rate.

J. Addison's disease--Hypofunction of adrenal cortex. Symptoms are hypotension, general weakness, loss of appitite, "bronzing" of the skin, and electrolyte imbalance.

K. Cushing's disease--Oversecretion of the adrenal cortex. Symptoms are tissue swelling, muscle and bone weakness, and masculinizing effects on women.

ENDOCRINE GLANDS

(Both male and female gonads are shown)


PINEAL BODY
PITUITARY
THYROID
PARATHYROIDS
THYMUS
ADRENALS
(suprarenals)
ISLANDS OF
LANGERHANS
(in pancreas)
OVARIES
TESTES

ENDOCRINE GLANDS, HORMONES, AND THEIR FUNCTIONS

Gland	Hormone	Primary Function
Pituitary,		
Anterior Lobe	Thyrotropin (THS)	Controls function of thyroid gland
	Adenocorticotropin (ACTH)	Regulates secretion of cortex of adrenal gland
	Somatotropin (STH)	Regulates skeletal growth
	Follicle-stimulating (FSH)	Controls development of reproductive systems
	Lactogenic hormone (LTH)	Promotes production of milk in mammary glands and general development
	Interstitial cell stimulating hormone (ICSH)	Regulates control and secretion of male sex hormone testosterone in testes. ICSH and testosterone together control development of male secondary sex characteristics
	Luteinizing hormone (LH)	Stimulates ovulation and formation of corpus luteum at site of ruptured ovarian follicle
	Melanocyte-stimulating hormone (MSH)	Regulates deposition of melanin in skin, providing pigmentation
Pituitary--		
Posterior lobe	Oxytocin	Promotes generalized contraction of smooth muscles, particularly the uterus in late pregnancy

TM-2

ENDOCRINE GLANDS, HORMONES, AND THEIR FUNCTIONS (con't)

Gland	Hormone	Primary Function
Pituitary--		
Anterior lobe	Vasopresin	Regulates water retention by kidney. Can produce mild increase in blood pressure as a vasoconstrictor
Thyroid	Thyroxine	Regulates metabolism
Parathyroid	Parathormone	Regulates calcium metabolism
Adrenal-- cortex	Aldosterone	Regulates electrolyte balance
	Cortisone (cortisol)	Maintains carbohydrate reserve
	Adrenosterone (Androgen)	Regulates male secondary sex characteristics
Adrenal--		
Medulla	Epinephrine (adrenalin)	Accelerates heart rate and causes vasoconstriction, thus raises blood pressure
Pancreas	Insulin	Regulates rate of glucose metabolism. Regulates concentration of glucose in blood
	Glucagon	Maintains glucose concentration in blood by causing liver to change glycogen to glucose

ENDOCRINE GLANDS, HORMONES, AND THEIR FUNCTIONS (con't)

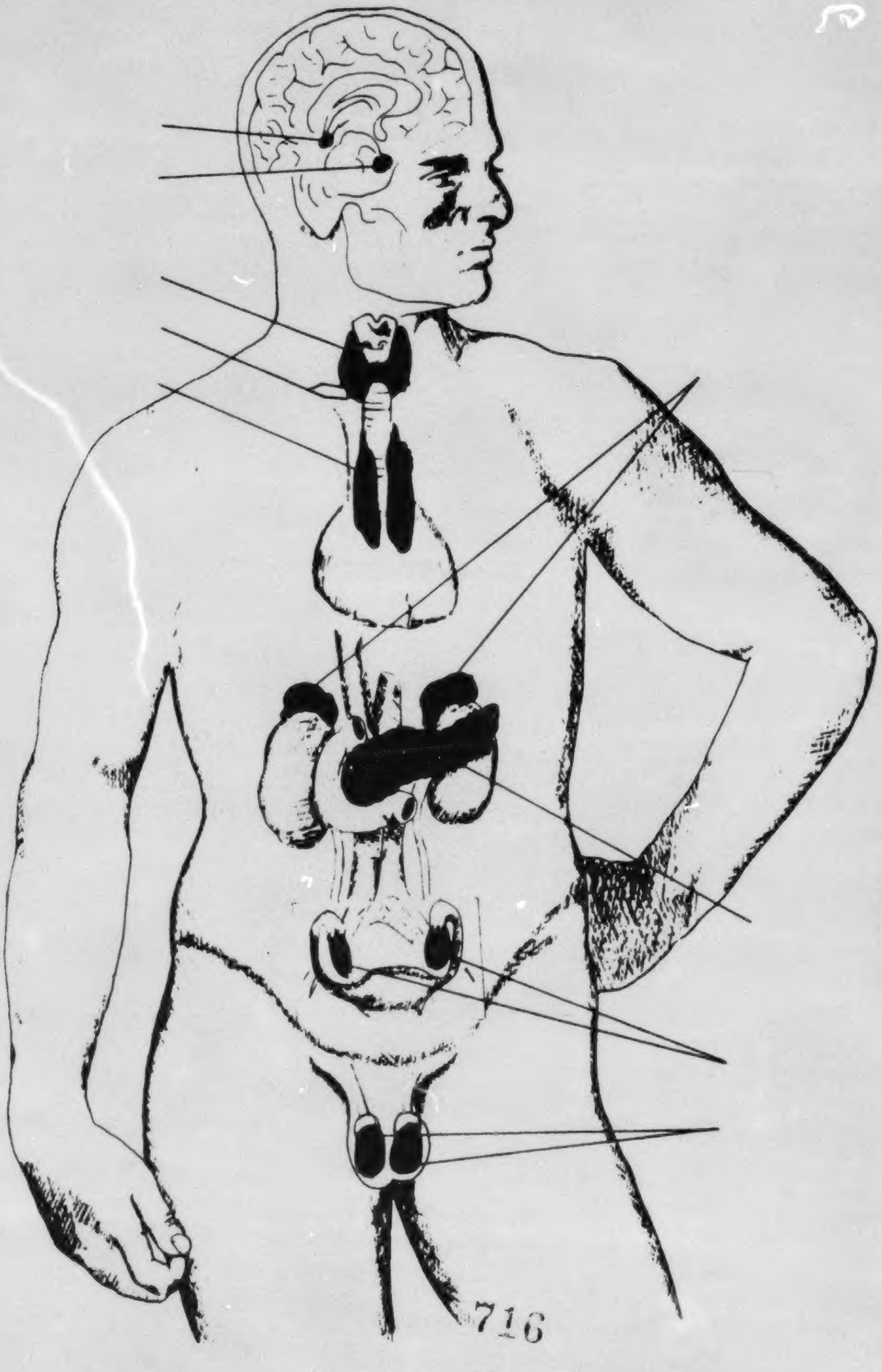
Gland	Hormone	Primary Function
Testes	Testosterone	Regulates development of male secondary sex characteristics. Influences development, maintenance, and function of male reproductive organs
Ovaries	Estrogen	Regulates development and maintenance of female reproductive system. Regulates development of secondary sex characteristics
	Progesterone	Normal development in pregnancy

UNIT X-I

ENDOCRINE GLANDS

ASSIGNMENT SHEET #1--LABEL DIAGRAM OF ENDOCRINE GLANDS

(Both male and female gonads are shown)



UNIT X-I

ENDOCRINE GLANDS

ASSIGNMENT SHEET #2--COMPLETION OF CHART OF ENDOCRINE GLANDS, HORMONES, AND THEIR FUNCTION

Directions: Using the chart of endocrine glands, hormones, and their function, fill in the numbered blanks with the appropriate word or phrase.

ENDOCRINE GLANDS, HORMONES AND THEIR FUNCTIONS

GLAND	HORMONE	PRIMARY FUNCTION
Pituitary--		
Anterior lobe	Thyrotropin (THS)	(1) ____________________
	Adenocorticotropin (ACTH)	Regulates secretion of cortex of adrenal gland
	(2) ________________	Regulates skeletal growth
	Follicle-stimulating (FSH)	(3) ____________________
	(4) ________________	Promotes production of milk in mammary glands and general development
	Interstitial cell stimulating hormone (ICSH)	Regulates control and secretion of male sex hormone testosterone in testes. ICSH and testosterone together control development of male secondary sex characteristics
	(5) ________________	Stimulates ovulation and formation of corpus luteum at site of ruptured ovarian follicle
	Melanocyte-stimulating hormone (MSH)	(6) ____________________

Pituitary--Posterior lobe	Oxytocin	(7) ____________
	(8) ____________	Regulates water retention by kidney. Can produce mild increase in blood pressure as a vasoconstrictor
Thyroid	(9) ____________	Regulates metabolism
(10) ____________	Parathormone	Regulates calcium metabolism
Adrenal--		
Cortex	(11) ____________	Regulates electrolyte balance
	Cortisone (cortisol)	Maintains carbohydrate reserve
	Adrenosterone (androgen)	Regulates male secondary sex characteristics
Adrenal--		
Medulla	(12) ____________	Accelerates heart rate and causes vasoconstriction, thus raises blood pressure
(13) ____________	Insulin	Regulates rate of glucose metabolism Regulates concentration of glucose in blood
	Glucagon	Maintains glucose concentration in blood by causing liver to change glycogen to glucose
Testes	(14) ____________	Regulates development of male secondary sex characteristics. Influences development, maintenance and function of male reproductive organs

Ovaries	(15) ____________	Regulates development and maintenance of female reproductive system Regulates development of female secondary sex characteristics
	Progesterone	(16) ________________________

UNIT X-I

ENDOCRINE GLANDS

ASSIGNMENT SHEET #3--IDENTIFICATION OF ENDOCRINE GLANDS IN RELATION TO DISEASES

Directions: Place in the blank space at the right the name of the endocrine gland which is related to the diseases listed. (Give the part of the gland if indicated.)

A. Acromegaly ____________________ A.
B. Addison's disease ____________________ B.
C. Cretinism ____________________ C.
D. Cushing's disease ____________________ D.
E. Diabetes insipidis ____________________ E.
F. Diabetes mellitus ____________________ F.
G. Dwarfism ____________________ G.
H. Exophthalmic goiter ____________________ H.
I. Gigantism ____________________ I.
J. Hyperinsulinism ____________________ J.
K. Myxedema ____________________ K.

UNIT X-I

ENDOCRINE GLANDS

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1--See labeled transparency TM-1

Assignment Sheet #2--Endocrine Glands, Hormones and Their Functions

1. Controls function of thyroid gland
2. Somatotropin (TH)
3. Controls development of reproductive systems
4. Lactogenic hormone (LTH)
5. Luteinizing hormone (LH)
6. Regulates deposition of melanin in skin, providing pigmentation
7. Promotes generalized contraction of smooth muscles, particularly the uterus in late pregnancy
8. Vasopresin
9. Thyroxine
10. Parathyroid
11. Aldosterone
12. Epinephrine (adrenalin)
13. Pancreas (Islets of Langerhans)
14. Testosterone
15. Estrogen
16. Normal development in pregnancy

Assignment Sheet #3--Identification of Endocrine Glands in Relation to Diseases

A. Anterior pituitary

B. Adrenal cortex

C. Thyroid

D. Adrenal cortex

E. Posterior pituitary

F. Pancreas (or Islets of Langerhans)

G. Anterior pituitary

H. Thyroid

I. Anterior pituitary

J. Pancreas (or Islets of Langerhans)

K. Thyroid

UNIT X-I

ENDOCRINE GLANDS

UNIT TEST

1. Match the terms on the right with their correct definitions.

_____a. Carbohydrate compound stored in animal cells

_____b. Chemical element needed for the development and functioning of the thyroid gland

_____c. A gland, the secretion of which is liberated directly into the blood stream, rather than by means of a duct

_____d. Sex characteristics that are not directly concerned with reproduction, as tone of voice, facial hair, and breast development

_____e. Pigment which gives color to hair and skin

_____f. To dissolve and assimilate, to absorb again

_____g. The secretion of milk

_____h. A gland that liberates a secretion by means of a duct

_____i. Type of white blood cell produced in lymph glands

_____j. The secretion of ductless glands, which regulate the function of other organs

1. endocrine gland
2. exocrine gland
3. glycogen
4. hormone
5. iodine
6. lactation
7. lymphocyte
8. melanin
9. resorption
10. secondary sex characteristic

2. Cite five general functions of hormones.

A.

B.

C.

D.

E.

3. Identify the hormones produced by the pituitary gland by completing the following statements.

   A. Hormones produced by the anterior pituitary:

      1. The hormone that controls the function of the thyroid gland is ______________

      2. The hormone that regulates the secretion of the cortex of the adrenal gland is ______________

      3. The hormone that regulates skeletal growth is ______________

      4. The hormone that controls the development of reproduction systems in males and females is ______________

      5. The hormone that promotes the production of milk in mammary glands is ______________

      6. The hormone that regulates the secretion of testosterone and, with testosterone, controls the development of male secondary sex characteristics is ______________

      7. The hormone that stimulates ovulation and the formation of corpus luteum at the site of the ruptured ovarian follicle is ______________

8. The hormone that regulates the deposition of melanin in the skin is ________________

B. Hormones produced by the posterior pituitary:

1. The hormone that promotes generalized contractions of smooth muscles, particularly of the uterus in late pregnancy is ________________

2. The hormone that regulates water retention by kidneys and also acts as a vasoconstrictor is ________________

4. A. Locate and discuss the function of the thyroid gland.

B. List three tests for thyroid function

1.

2.

3.

5. Locate the parathyroid glands, name the hormone produced and give its function

6. Identify the hormones produced by the adrenal gland by answering the following questions.

   A. Cortex

      1. Which hormone regulates electrolyte balance? ______________

      2. Which hormone maintains the carbohydrate reserve of the body by changing amino acids to sugar instead of protein? ______________

      3. Which hormone governs the secondary sex characteristics? ______________

   B. Medulla

      What are three general functions of epinephrine and norepinephrine?

      1.

      2.

      3.

7. Discuss the functions of insulin.

8. List the hormones produced by the testes and ovaries and give their function

9. Summarize the endocrine activity of the placenta, the pineal gland, and the thymus gland.

10. Choose from the following list, the endocrine disorder described in the lettered phrases. Place your answer in the blank space at the end of each phrase.

acromegaly

Addison's disease

cretinism

Cushing's disease

diabetes insipidus

diabetes mellitus

dwarfism

exophthalmic goiter

giantism

hyperinsulinism

myxedema

a. An oversecretion of the adrenal cortex. Symptoms are tissue swelling, muscle and bone weakness, and masculinizing effects in women. ________________

b. Hypofunction of the adrenal cortex. Symptoms are hypotension, general weakness, loss of appetite, "bronzing" of the skin and electrolyte imbalance. ________________

c. Disease characterized by presence of a goiter. Bulging of the eyes, strained appearance of face, intense nervousness, weight loss, rapid pulse, sweating, and tremor. ________________

d. Hypothyroidism in adults. The patient is mentally and physically sluggish, skin and hair are dry, tissues of face swell. ________________

e. Condition in which there is an excess of insulin in the blood. This may be due to the overactivity of the Islets of Langerhans, or to the treatment of diabetes mellitus if more insulin is given than needed. ________________

f. Condition in which there is a serious lack of thyroid activity from infancy. The patient becomes dwarfed and mentally deficient. ________________

g. Disease that results from a lack of insulin. Glucose is not utilized by the body, but is excreted in the urine. ________________

h. Disease in which a deficiency of vasopresin of the posterior pituitary prevents reabsorption of water by the renal tubules. This leads to the excretion of large volumes of urine. ________________

i. Disease that results from hyperactivity of the anterior pituitary in childhood causing abnormal tallness. ________________

j. Disease that results from a deficiency of the somatotropic hormone produced by the anterior pituitary. The patient is abnormally short or undersized. ________________

k. Disease of adults that results from hyperactivity of the anterior pituitary, characterized by widening of the bones of the hands, face, and feet. ________________

11. Locate the endocrine glands in a diagram.

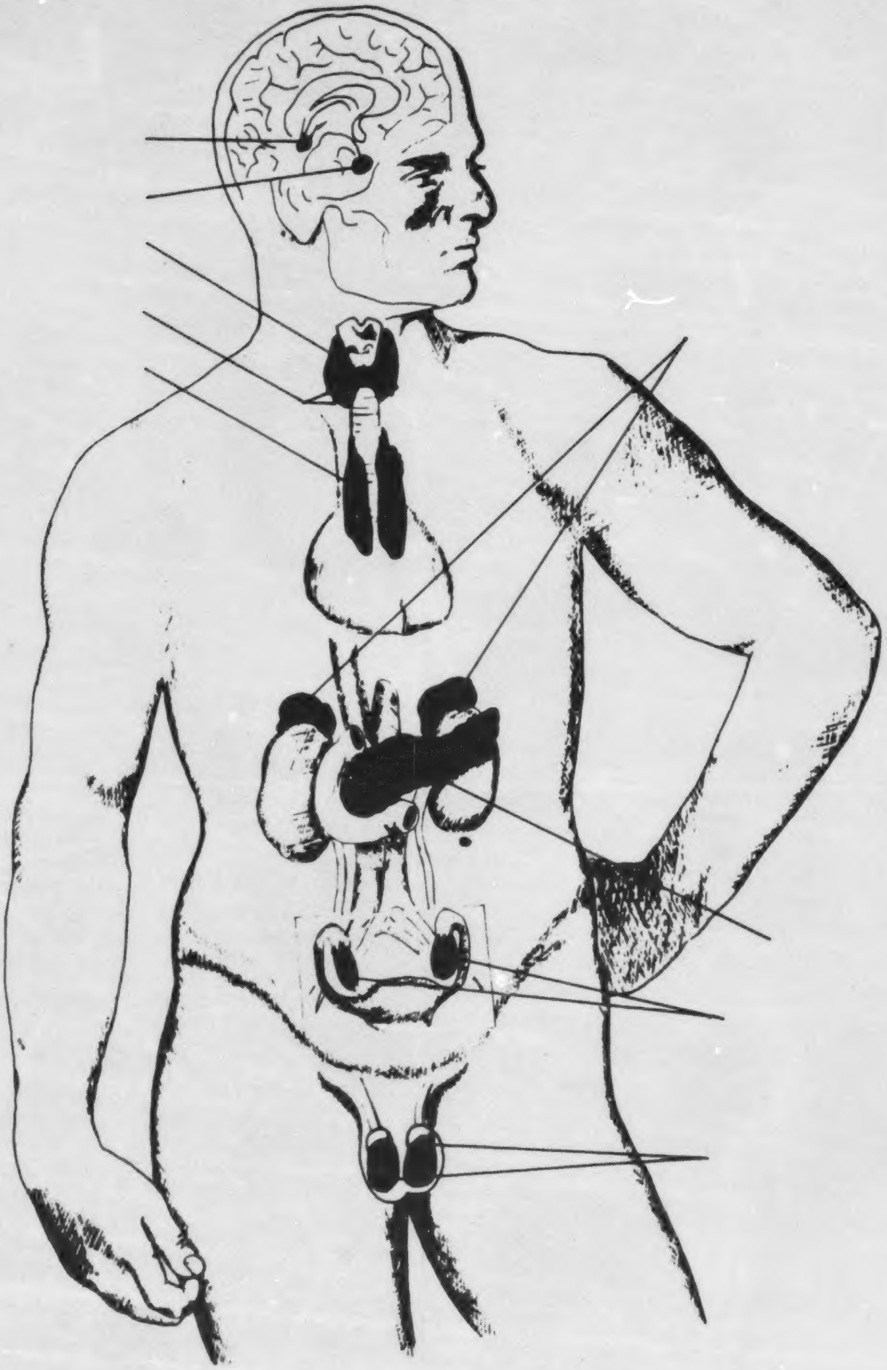
12. Complete a chart of the endocrine glands, hormones and their functions.

13. Identify endocrine glands in relation to disease.

(NOTE: If activities #11 - #13 have not been completed prior to the test, ask the instructor when they should be completed.)

ENDOCRINE GLANDS

(Both male and female gonads are shown)



UNIT X-I

ENDOCRINE GLANDS

ANSWERS TO UNIT TEST

1. __3__ a.
   __5__ b.
   __1__ c.
   __10__ d.
   __8__ e.
   __9__ f.
   __6__ g.
   __2__ h.
   __7__ i.
   __4__ j.

2. A. Regulation of metabolism
   B. Regulation of growth and development
   C. Regulation of reproduction
   D. Regulation of stress response
   E. Regulation of cell permeability

3. A. Anterior pituitary
      1. thyrotropin
      2. adrenocorticotropin
      3. somatotropin
      4. follicle-stimulating (gonadotropic)
      5. lactogenic hormone
      6. interstitial cell stimulating
      7. luteinizing hormone
      8. melanocyte stimulating hormone
   B. 1. oxytocin
      2. vasopressin

4. A. The thryoid gland is located just below the larynx, in the neck. Its function is to produce the hormone thyroxine, which regulates metabolism.

   B. 1. Basal metabolism test- which determines the amount of oxygen a person uses under basal conditions.

      2. Protein bound iodine test (PBI), which determines the amount of iodine in the blood.

      3. The use of radio-active iodine to determine thyroid function.

5. The parathyroid glands are located on the lobes of the thyroid gland.

   The hormone produced is parathormone. Parathormone regulates calcium metabolism.

6. A. Cortex
      1. aldosterone

      2. cortisol (cortisone)

      3. adrenosterone

   B. 1. Elevates blood pressure by accelerating heart rate and by vasoconstriction.

      2. Promotes breakdown of glycogen to glucose, thus increasing blood sugar concentration.

      3. Causes dilation of bronchioles through relaxation of smooth muscles

7. The Islets of Langerhans of the pancreas secrete the hormones insulin and glucagen. Insulin regulates the rate of glucose metabolism and the concentration of glucose in the blood. A deficiency of insulin results in diabetes mellitus, increased production of insulin may cause insulin shock. Glucagon controls the rate at which the liver changes glycogen to glucose.

8. Testes:

   A. Testosterone--

      1. Regulates the development of male secondary sex characteristics

2. Influences the development, maintenance and function of the reproductive organs.

B. Ovaries:

1. Estrogen--

    a. Regulates the development and maintenance of the female reproductive system.

    b. Regulates the development of female secondary sex characteristics.

2. Progesterone--

    Assists in normal development in pregnancy

9. The placenta produces hormones that cause changes in the uterine lining and prepare breasts for lactation.

The pineal gland produces melatonin in some animals. Its function in humans is controversial.

The thymus gland produces hormones that stimulate the production of small lymphocytes. It also produces thymosin which promotes the growth of lymph tissue.

10. a. Cushing's disease
    b. Addison's disease
    c. exophthalmic goiter
    d. myxedema
    e. hyperinsulinism
    f. cretinism
    g. diabetes mellitus
    h. diabetes insipidus
    i. gigantism
    j. dwarfism
    k. acromegaly

11. Evaluated to the satisfaction of the instructor.

12. Evaluated to the satisfaction of the instructor.

13. Evaluated to the satisfaction of the instructor.

*NUTRITION/DENTAL HEALTH
UNIT XI

UNIT OBJECTIVE

After completing this unit, the student will be able to name the basic nutrients, the four basic food groups, classify characteristics of five standard diets and complete a chart on diet modifications. The student will also be able to identify dental instruments, label parts of the dental anatomy and be familiar with the concept of preventive dentistry. This knowledge will be evidenced by satisfactory completion of a unit test.

SPECIFIC OBJECTIVES

After completing this unit, the student will be able to:

1. Match terms associated with nutrition to their correct definitions.
2. Name functions of food.
3. Name reasons why good nutrition is essential.
4. Select from a list factors that influence food habits.
5. Name the two kinds of metabolism.
6. Name the basic nutrients.
7. Name the four basic food groups and the suggested servings of each.
8. Classify primary causes of nutritional deficiency.
9. Match terms associated with nutritional deficiency to their correct definitions.
10. Classify vitamins according to solubility.
11. Name the approximate number of calories in one gram of selected nutrients.
12. Match selected nutrients to the correct percentage needed in daily diet.
13. List factors that affect energy requirements.

*Derived in part from Health Services Careers, Unit I-Nutrition (copyright 1979). Used by permission of Oklahoma Curriculum and Instructional Material Center.

14. Arrange in order steps in determining calorie requirements.

15. Match terms associated with evaluation of foods to their correct definitions.

16. Classify common types of poisoning by foods.

17. Classify illnesses transmitted through foods by animals, food handlers and shoppers, and improper preparation or storage of food.

18. Classify characteristics of the five standard diets.

19. Name purposes of a therapeutic diet.

20. Complete a chart on therapeutic or modified diets.

21. Match ways of administering fluids to patients to their correct definitions.

22. Distinguish between symptoms of edema and dehydration.

23. Write an essay on a current news item about nutrition.

24. Make a food poster.

25. Measure intake.

26. Evaluate food and fluid intake for three consecutive days.

27. Identify measures for the prevention of dental disease.

28. Review the concept of preventive dentistry.

29. Name the two sets of teeth and how many teeth are included in each set.

30. Label the parts of a tooth and adjacent structures on a diagram.

31. Label the surfaces of the teeth and quadrants of the mouth.

32. Label the parts of the oral cavity.

33. Identify the sections of the mouth.

34. Match dental terms with their definitions.

35. Identify the instruments on the examination tray and the adult prophylaxis tray and be familiar with their function.

NUTRITION/DENTAL HEALTH
UNIT XI

SUGGESTED ACTIVITIES

I. Suggested activities for the instructor:

   A. Provide students with objective sheet.

   B. Discuss unit and specific objectives.

   C. Provide students with information sheet.

   D. Discuss information sheet.

   E. Provide information for students to use in completing assignment sheets.

   F. Show overhead transparency and/or distribute handout on the Four Basic Food Groups.

   G. Provide students with height, weight, and calorie charts. Have students use these charts to determine their ideal weight and to calculate their daily calorie requirements based on calories per pound of body weight.

   H. Have students listen to cassette on Weight Control by Jean Mayer. After playing the cassette, lead class discussion on proper diet and weight control.

   I. Ask students to consider and discuss ways in which to improve their eating habits, including the following factors:

   - When they eat and how often
   - What they eat compared to basic essentials
   - Where they eat and under what circumstances
   - How much they eat compared to normal intake for individuals of their age and height
   - What, if any, changes should be made in their eating habits
   - How they plan to make appropriate changes

J. Discuss how proper nutrition maintains health and prevents illness.

K. Discuss the dangers of snack foods to good nutrition.

L. Have students list ways in which parents might disguise protein foods, such as eggs and milk, to encourage children to eat them.

M. Have students compile a list of foods rich in iron and discuss ways of supplying an adequate amount of iron to the diet of an adult who does not like liver.

N. Ask a school nurse or dietitian to speak to the class about the importance of special diets in treating disease and the effects of dietary errors in patient care, such as giving a diabetic a regular diet or giving a cardiac patient a high sodium diet.

O. Have students prepare special diet menus (e.g., low sodium diet, low residue diet).

P. Discuss illnesses which can be caused by consumption of unsanitary food.

Q. Have students prepare oral or written reports on diseases that can be carried on foods, including mode and agent of transmission and symptoms.

R. Show students microscopic slides of some of the causative agents of food poisoning.

S. Discuss the importance of water and purification methods.

T. In class, cook four ounces of lima beans or a similar vegetable (fresh or frozen) in soft water; cook another four ounces of the same vegetable in hard water. Have students check vegetables for toughness, texture, color, and taste. Lead class discussion on which sample is more palatable and which has greater nutritional value.

U. Discuss health careers related to nutrition and dietary treatment of disease.

V. Invite clergy from various faiths (Roman Catholicism, Judaism, Greek Orthodox Church) to discuss the dietary restrictions of their faith and effects on patients' dietary treatment.

W. Arrange a field trip to the dietary department of a local health care facility. Ask the dietitian to discuss therapeutic diets, including how they differ in variety, consistency, energy value, etc. Observe food preparation, service, and clean-up.

X. Invite a dietitian, dairy council representative, or similar worker in the field of nutrition to speak to the class.

Y. Ask students to research and report on the history of vitamins from 1882 to the present.

Z. Conduct a laboratory experiment to demonstrate food spoilage. Place a small piece of bread in each of two petri dishes. Place a few drops of water on one piece and cover. Leave the second petri dish uncovered. Observe for a week.

AA. Arrange a field trip to a local supermarket. Have students identify good and poor "buys" in fresh meats, fresh fruits and vegetables, frozen foods, canned foods, dried foods, dairy foods, beverages, cereals, and snacks. Students should base their judgments on unit price, package size, weight, and nutritional value. Follow up this field trip with a discussion on purchasing nutritious food economically.

BB. Have students select an advertisement for food or a food supplement from any source and determine whether the advertised product provides the nourishment indicated. Is it necessary to good health? Is it an economical source of the nutrients it provides?

CC. Review a menu for daily meals at a nursing home and determine if they are based on the basic food groups and how they meet geriatric needs.

DD. Have students plan an ethnic meal to introduce others to the foods and dishes of a particular ethnic group. Your meal should meet the criteria for a healthful diet.

Students in some schools have worked with the dietitian in their school lunch program to plan and prepare ethnic menus for school lunches. Hospital cafeterias, nursing homes, and community lunch programs are other possibilities for a project of this sort. Check with your instructor about the possibilities for such a project in your school or community.

EE. Have students analyze a vegetarian diet for nutritional soundness. Is the protein in the diet complete? If not, what modifications will make the protein complete?

FF. Ask members of dental profession to speak to class on good dental care and career opportunities.

GG. Contact a dentist or the local dental society concerning availability of a phase contrast microscope. If one can be obtained, have students view plaque from their own mouths, gently removing samples from the gum line with a toothpick. The advantage of using a phase contrast microscope is that bacteria can be viewed while they are alive. It is possible, though less satisfactory, to use an oil immersion microscope.

HH. If a phase contrast (or oil immersion) microscope is not available, ask the biology teacher to assist students in preparing slides of plaque from their own mouths, staining plaque with methylene blue. Students may then view bacteria with a standard microscope. The staining procedure will kill the bacteria.

II. Using the indicator dye 0.02% aqueous methyl red, obtainable from the chemistry department or from a pharmacy, demonstrate acid formation by bacteria in plaque. Show the action of the dye by adding soap (alkaline) to intensify yellow color; then add vinegar to show the red color in the presence of acid. When students understand how the dye works, make a donut-shape of plaque scraped from several students' teeth on a clean plate. Then put two or three drops of dye on the plaque. Add a few crystals of sugar to the liquid in the center of the ring. Bacteria will begin to turn the dye red as acid formation begins. If color is not clear, stir the mass a bit and/or add more dye.

JJ. Assign a group of students to ask the local health department if the community water supply:

1. Is adequately **fluoridated** to help prevent caries?
2. Is adjusted to provide an adequate fluoride level?
3. Has had the fluoride level controlled for a number of years? When was the program started?
4. Was there ever a local referendum?
5. Has state legislative action been taken?

KK. Have class members view the discussion-provoking trigger film, "Is Flouridation the Answer?" Then assign teams of class members to prepare a debate on the subject, "Adjustment of the Fluoride Content of Our Community's Water Supply is a Desirable Public Health Measure."

LL. Invite a hygienist to discuss and demonstrate the various ways fluoride may be made available to teeth.

MM. Give test.

II. Instructional Materials:

A. Objective sheet

B. Information sheet

C. Assignment sheets

1. Assignment Sheet #1
   Write an Essay on a Current News Item About Nutrition

2. Assignment Sheet #2
   Make a Food Poster

3. Assignment Sheet #3
   Measure Intake

4. Assignment Sheet #4
   Food and Fluid Intake

5. Assignment Sheet #5
   Preventive Dentistry

6. Assignment Sheet #6
   Parts of a Tooth

7. Assignment Sheet #7
   Parts of the Oral Cavity

8. Assignment Sheet #8
   Surfaces of the Teeth/Quadrants of the Mouth

D. Test

E. Answers to Test

III. Unit References:

A. Mitchell, Pamela H. Concepts Basic to Nursing. New York: McGraw-Hill Book Company, 1973.

B. Cherescavich, Gertrude D. A Textbook for Nursing Assistants. St. Louis: C.V. Mosby Company, 1973.

C. Rogers, Helen. Nursing I: A Course of Study. Stillwater: Oklahoma State Department of Vocational and Technical Education/ Curriculum and Instructional Materials Center, 1974.

D. Wittman, Karl S. Basic Sciences for Health Careers. New York: McGraw-Hill Book Company, 1976.

E. Taber's Cyclopedic Medical Dictionary. F.A. Davis Company.

F. Curriculum Guide for Health Occupations Education. Illinois Office of Education, Department of Adult, Vocational and Technical Education.

G. Health Occupations Education: Health Service Careers. Oklahoma State Board of Vocational and Technical Education. Oklahoma: Curriculum and Instructional Materials Center, 1979.

H. The Dental Assistant 4th Edition Richardson, Barton, Brauer. St. Louis, Missouri: McGraw Hill Publishing House.

I. Modern Dental Assisting Torres and Ehrlich. Philadelphia, Pennsylvania: W. B. Saunders Company.

J. Expanded Duties for the Dental Assistant Preventive Dentistry. Arkansas State Dental Association.

K. Nutrition in Preventive Dentistry: Science and Practice Nizel. Philadelphia, Pennsylvania.

L. Anderson, Pauline C. The Dental Assistant. Albany, New York: Delmar Publishers, 1970.

M. Boucher, Carl O. Current Clinical Dental Terminology. St. Louis, Missouri: C.V. Mosby Company, 1963.

N. Learning About Your Oral Health American Dental Association.

IV. Additional Resources:

A. Filmstrips

1. "Feeding the Patient." Trainex Corporation, P.O. Box 116, Garden Grove, CA 92642.

2. Arkansas Department of Education
"Look Before You Eat"
"Vitamins - What Do They Do?"
"Eating on the Run Film"
"Food That Builds Good Health."
"Food Labeling - Understanding What You Eat."
"Nutrition: Fueling the Human Machine."

3. Arkansas Department of Health
"Nutrition Sense and Nonsense." G 106
"Read the Label, Set a Better Table." G 121
"Make a Good Food Better." G 119
"Food for Life." G 115
"Set Stage for Dental Health." T 102
"Dental Assistant - A Career of Service." T 120
"Fluoridation: A White Paper." T 119

4. "Doorway to Dental Health"
"Is Fluoridation the Answer?"
"Why Fluoridation?"
"Who Are You Kidding"
"Teeth Are For Keeping"
"Teeth"
American Dental Association
Bureau of Audiovisual Service
211 East Chicago Avenue
Chicago, Illinois 60611

B. Pamphlets:

1. "Fluoridation Facts"
"Between You and Me Is Your Smile"
"Cleaning Your Teeth and Gums"
"Seven Warning Signs of Gum Disease"
"Your Teeth and What They Do"
American Dental Association
Bureau of Audiovisual Service
211 East Chicago Avenue
Chicago, Illinois 60611

NUTRITION/DENTAL HEALTH

UNIT XI

INFORMATION SHEET

I. Terms and definitions

   A. Nutrition-Study of foods and their relation to health

   B. Nutrient-Chemical compound found in food

   C. Food-Substance that the body uses to yield energy, to build or repair tissues, and/or to regulate body processes

   D. Dietetics-Science which deals with the use of foods in health and disease

   E. Diet-Food and drink **consumed** each day

   F. Digestion-Process of changing food in the mouth, stomach, and intestines, so that it can be absorbed by the blood and used by the cells

   G. Amino acids-Chemical compounds which are components of proteins

   H. Hydrochloric acid-Normal constituent of gastric juices produced by glands in the stomach

   I. Lipid-Oily substance not soluble in water

   J. Dental caries-Gradual decay of enamel and dentin of a tooth

   K. Gram-Metric unit of weight

   (NOTE: A gram is approximately equal to fifteen grains.)

   L. Obesity-Condition in which there is an excessive amount of fat in the body

   M. Cholesterol-Fatlike, pearly substance found in animal fat, oils, brain tissue, milk, yolks of eggs, liver, kidneys, and adrenal glands

II. Functions of food

   A. Providing heat

   B. Promoting growth

   C. Repairing tissues

   D. Regulating body processes

INFORMATION SHEET

III. Reasons why good nutrition is essential

A. Promotes a healthier body and mind

B. Provides greater personal energy and vitality

C. Promotes resistance to illness

D. Speeds healing

E. Produces stronger bones and muscles

F. Promotes good posture

G. Helps individual feel and sleep better

IV. Factors that influence food habits

A. Personal attitudes

(NOTE: This includes your likes and dislikes of foods and the method of preparing them. Childhood training and family food preferences affect your attitude toward food.)

B. Region and availability

(NOTE: Certain areas of the country have characteristic foods, although there is a greater variety of foods due to increasing transportation facilities.)

C. Income

(NOTE: Lower income families spend proportionally more of their income for food.)

D. Age

(NOTE: Young, active people need high energy foods more than older, less active people.)

E. Religious influence

(NOTE: Various religions have diet restrictions which require special planning to assure adequate diet.)

INFORMATION SHEET

F. Pregnancy and lactation

(NOTE: Pregnant women require additonal nutrition, but not additional calories.)

G. Nationality and race

(NOTE: Food preference and preparation varies from one nation to another.)

H. Advertisements

(NOTE: Communication about foods and food preparation methods in articles and on radio and television influence food habits.)

V. Metabolism (intermediary)

A. Anabolism - The building up of the body substance; a chemical reaction involving the synthesis of organic compounds from simpler molecules with the addition of energy.

B. Catabolism - The breaking down of living cells into simple substances; a chemical reaction involving the breakdown of large organic compounds into smaller organic molecules with the release of energy.

VI. Basic nutrients

A. Protein

B. Carbohydrates

C. Fat

D. Minerals

E. Vitamins

F. Water

VII. Four basic food groups and suggested servings of each

(NOTE: The main part of the diet should be selected from the four basic food groups. Other foods may be added to make meals more appealing and satisfying.)

INFORMATION SHEET

- A. Milk-Two servings

  (NOTE: Children and pregnant women need three to four servings; teenagers and lactating mothers need four or more servings.)

- B. Meat-Two or more servings
- C. Bread and cereal-Four or more servings
- D. Fruit and vegetables-Four or more servings, including one citrus fruit

VIII. Primary causes of nutritional deficiency

- A. Inadequate intake
  1. Poor food habits
  2. Consumption of nutrient deficient food
  3. Anorexia due to disease
  4. Diarrhea
  5. Alchoholism

     (NOTE: Alcoholism may depress the appetite.)

  6. Faulty therapeutic diet
  7. Lack of proper food
- B. Poor use of ingested food
  1. Faulty absorption in the intestinal tract
  2. Metabolic disturbances

     Example: Decreased insulin production

  3. Disease of digestive tract
  4. Food allergies

INFORMATION SHEET

IX. Terms and definitions associated with nutritional deficiency

A. Nutritional deficiency-Insufficient amount of one or more essential nutrients in diet

B. Malnutrition-Lack of necessary food substances in body

C. Anorexia-Lack or loss of appetite

D. Avitaminosis-Disease due to lack of vitamins in diet

E. Hypervitaminosis-Toxicity caused by excessive amounts of one or more vitamins

F. Rickets-Softened bone condition in children resulting from deficient deposits of calcium in bone-forming cartilages

G. Pellagra-Deficiency disease due to insufficient niacin and protein; characterized by dermatitis, diarrhea, anemia, and mental symptoms

H. Scurvy-Deficiency disease due to insufficient vitamin C; characterized by loss of energy, pain in limbs, weakness, and edema

X. Solubility of vitamins

A. Fat soluble

1. Vitamin A
2. Vitamin D
3. Vitamin E
4. Vitamin K

B. Water soluble

1. Vitamin C
2. Vitamin B complex

(NOTE: Vitamin B complex includes thiamine, riboflavin, niacin, biotin, folic acid, pyridoxine, and cobalamin.)

INFORMATION SHEET

XI. Approximate number of calories in one gram of nutrients

- A. Carbohydrate-Four
- B. Protein-Four
- C. Fat-Nine

XII. Percentages of nutrients needed in the daily diet

- A. Carbohydrates-Forty to fifty percent
- B. Protein-Ten to fifteen percent
- C. Fat-Twenty-five to thirty percent

  (NOTE: Most Americans have a fat intake of forty percent. In countries where fat intake is around twenty percent and more unsaturated fats are used, the incidence of artherosclerosis is less.)

XIII. Factors that affect energy requirements

- A. Physical activity
- B. External climate
- C. Body temperature
- D. Age
- E. Size
- F. Sex
- G. Endocrine secretions
- H. Medications
- I. Emotions
- J. Sleep
- K. Nutrition
- L. Pregnancy

INFORMATION SHEET

XIV. Steps in determining calorie requirements

A. Determine ideal weight

(NOTE: Tables giving desirable weights for adults are usually found in nutrition textbooks.)

B. Determine **calories** needed

(NOTE: A moderately active woman needs 18.0 calories per pound, a moderately active man needs 20.5 calories per pound, and a man doing strenuous labor may need up to 28.0 calories per pound of ideal weight.)

C. Multiply ideal weight by calories needed

Example:	Ideal weight of moderately active woman	125	pounds
		x18	calories
		2,250	calories per day

XV. Terms and definitions associated with evaluation of foods

A. Condiment-Seasoning; ingredient added to enhance the flavor of food

B. Mislabeling-Incorrect or incomplete information on a label

C. Additive-Element added to natural food, usually to improve or preserve

D. Dehydrated-Pertaining to food with water removed

E. Restored-Food in which nutrients lost in processing are replaced

F. Fortified-Food with more nutrients added than it has in its natural state

G. Enriched-Food improved in nutritive value by adding vitamins and minerals during processing

H. Diet therapy-Modifications of patient's normal diet to meet requirements created by disease or injury

I. Intake and output-Accurate record of all liquids taken by patient and accurate measurement of all urine, vomitus, drainage, and other liquid lost from the body

J. Edema-Condition in which body tissues retain excessive amount of tissue fluid

INFORMATION SHEET

K. Ascites-Excessive accumulation of fluid in peritoneal cavity

L. Anuria-Suppression of urinary output

M. Oliguria-Diminished urinary output

N. Dehydration-Condition that results when fluid output exceeds fluid intake

O. Diaphoresis-Profuse prespiration

P. Diuretic-Agent or medication that increases urinary output

Q. Polyuria-Excessive secretion and excretion of urine

R. Graduate-Measuring device marked in cm^3 (cc's)

S. Tissue turgor-Fullness of tissue related to the amount of fluid surrounding the cells

T. Peritoneal cavity-Space between layers of peritoneum

XVI. Common types of poisoning by foods

A. Foods with chemical poisons

1. Toxic mushrooms
2. Rhubarb leaves
3. Green part of white potatoes

B. Chemical poisons added to foods

1. Insecticides used to spray growing fruits or vegetables
2. Sprays and insecticides used in and around the home
3. Silver polishes which contain cyanide

C. Disease-producing organisms in foods

1. Products from diseased animals
2. Foods contaminated by food handlers
3. Foods improperly cooked or stored

INFORMATION SHEET

XVII. Ilnesses transmitted through foods

A. By animals

1. Tuberculosis

   Example: Infected cattle

2. Dysentery

   Example: Contaminated milk

3. Scarlet fever

   Example: Unpasteurized milk

4. Streptococcal infection

   Example: Unpasteurized milk

5. Tularema

   Example: Wild rabbits

6. Brucellosis

   Example: Flesh and meat of cattle, swine, or other animals

7. Worm infestation

   Example: Tapeworm from cattle, trichinosis from pork

8. Salmonella infections

   Example: Pork, poultry and eggs, foods contaminated by rats and mice

9. Infectious hepatitis

   Example: Contaminated food, seafood

B. By food handlers and shoppers

1. Common colds

2. Influenza

INFORMATION SHEET

3. Scarlet fever
4. Diphtheria
5. Tuberculosis
6. Staphylococcal infections
7. Intestinal pathogens
8. Infectious hepatitis
9. Typhoid fever

C. Through improper preparation or storage of food

1. Staphylococcal infections

   Example: Precooked hams, milk, custards, cream fillings, and salads which have not been refrigerated properly

2. Streptococcal infections

   Example: Meat and poultry dressing improperly cooked

3. Clostridium perfringens

   Example: Vegetables improperly cleaned or canned

4. Botulism

   Example: Improperly canned vegetables

XVIII. Standard diets

A. Clear or surgical liquid

1. Used after surgery or to replace fluids lost by vomiting or diarrhea
2. Composed mainly of water and carbohydrates; nutritionally inadequate
3. Includes tea or black coffee, fat-free broth, strained vegetables or fruit juices, gelatin, and carbonated beverages

INFORMATION SHEET

B. Full or medical liquid

1. Used during acute infection for patients having difficulty chewing or swallowing and for those with gastrointestinal disturbances

   (NOTE: Diet may be used as a tube feeding using a nasogastric tube inserted into the stomach.)

2. May be used for an indefinite period if physical activity is limited; may be deficient in iron

3. May include all liquids, such as strained cream soups, milk, strained cereals, plain puddings, and plain ice cream and sherbet

C. Soft

1. Usually given between liquid and full diets for patients who need easily chewed foods

2. Can be planned to be nutritionally adequate

3. Includes all foods, except fried foods, nuts, whole-grain cereals or breads, fibrous vegetables, pastries, pickles, and tough meats

D. Light or convalescent

(NOTE: Many health care facilities omit soft or light diet classification because they are similar.)

1. Usually given to preoperative and postoperative patients and those with minor illnesses

2. Nutritionally adequate

3. Includes all foods, except fried foods, pastries, fibrous vegetables, and nuts

E. Full

(NOTE: This may be called general, regular, normal, or house diet.)

INFORMATION SHEET

1. Used most frequently and given to all patients whose conditions do not require a special diet
2. Based on basic four food groups; normal diet
3. Includes all foods

(NOTE: Some health care facilities restrict the amount of pastries, fried foods, strongly flavored vegetables, and highly seasoned foods.)

XIX. Purposes of a therapeutic diet

A. Regulation of the amount of specific foods in metabolic disorders

B. Increase or decrease of body weight by adding or limiting calories

C. Prevention or restriction of edema by restricting sodium intake

D. Aiding digestion by avoiding foods that irritate the digestive tract

E. Assisting an organ to regain and/or maintain its normal function

XX. Therapeutic or modified diets

(NOTE: See following charts.)

INFORMATION SHEET

DIET	FOODS ALLOWED	FOODS OMITTED	CONDITIONS
Low Carbohydrate	Only enough carbohydrates to maintain health and carry on activities Dietetic foods	Sugar and sugar-sweetened foods All jellies and candies Pastries and desserts Alcoholic beverages	Diabetes mellitus Hyperinsulinism (Nutritionally adequate)
Low Fat	Increased carbohydrates and proteins Skim milk Sherbert Minimum amount butter Vegetables and fruits as desired	All fats limited Fried foods Pork Ice cream, pastries	Gall bladder and liver disease Obesity Heart conditions (Deficient in fat soluble vitamins)
High Iron	Normal diet with high-iron foods Liver and organ meats Red meats All dried fruits Soybeans Molasses		Nutritional anemia Pernicious anemia (Nutritionally adequate)
Low Cholesterol	Lean muscle meats, fish Poultry (without skin or fat) Skim milk Margarine made of unsaturated fats Liquid vegetable oil	Organ meats Egg yolk Shellfish Desserts made with cream, whole milk Cream, butter	Atherosclerosis Coronary circulation disease (Nutritionally adequate)

INFORMATION SHEET

DIET	FOODS ALLOWED	FOODS OMITTED	CONDITIONS
High Calorie (4000 calories)	Emphasis on increase of calories rather than increase of nutrients Full meals with high calorie between-meal snacks	Fatty foods and bulky foods Foods patient dislikes	For persons ten percent of more below desired weight for age, height, and sex (Diet adequate in all nutrients)
High Protein (up to 100 grams)	Added amounts of meat, milk, cheese, eggs, fish and poultry Additional nonfat dry milk to increase protein without increasing fat	Fatty foods	Children and adolescents who need additional protein for growth Pregnancy and lactation Following surgery Illnesses resulting in protein loss (Nutritionally adequate)
Low Protein (approximately 40 grams)	One ounce daily--meat, poultry, fish, or cheese One egg daily Butter as desired Fruits and vegetables as desired One cup milk daily	Meat over one ounce Puddings unless made with milk allowance Cream soups unless prepared with milk allowance Dried peas and beans	Kidney conditions Liver ailments Heart conditions (Nutritionally inadequate in protein, calcium, iron and all vitamins except vitamin C)
High Carbohydrate	Emphasis on carbohydrate foods Full meals with high carbohydrate snacks	Fried foods Fatty meats Pastries Alcoholic beverages Spices and condiments	Preparation for surgery Kidney disease Toxemia of pregnancy Liver disease (Nutritionally adequate)

INFORMATION SHEET

DIET	FOODS ALLOWED	FOODS OMITTED	CONDITIONS
High Residue	Increased whole grain cereals Increased fruits, vegetables		Atonic constipation Nutritionally adequate
Bland	Generous amounts of milk and protein foods Refined cereals Simple desserts Ripe banana, applesauce, baked apple, peaches pears Decaffeinated coffee, weak tea Carrots, beets, string beans, spinach, squash without seeds, asparagus tips, peas	Fried foods Meats with coarse fiber, tough gristle Coarse foods Highly seasoned foods Fruits and vegetables other than allowed Pastries and candies Alcoholic beverages	Gastric ulcer Spastic constipation Colitis (Nutrionally adequate if well planned)
Low Residue	Refined cereals, breads Soft cheese (cottage, cream) Tender meats Pureed vegetables Applesauce, canned peaches, pears, white cherries, pureed apricots, prunes, plums, fruit juices Plain pudding, angel cake, sponge cake	Fibrous meats Fresh fruits and vegetables Fried foods Whole grain cereals, breads Spices and condiments Pastries and candies Alcoholic beverages	Before and after intestinal surgery Severe diarrhea Colitis, diverticulitis Hemorrhoid (Deficient in vitamins)
Sodium Restricted	Natural foods prepared without salt Milk, meat in limited amounts Fruits and vegetables without salt Unsalted bread Desserts prepared without salt	Processed foods Salt, many seasonings Monosodium glutamate Baking power, baking soda Brine prepared foods Food preservatives containing sodium Cultured buttermilk	Kidney diseases Cardiovascular disorders Hypertension (Nutrionally adequate if well-planned)

INFORMATION SHEET

XXI. Ways of administering fluids to patients

A. Orally-Foods and fluids taken by mouth or gastric tube

B. Intravenously-Fluids given into the vein

C. Hypodermoclysis-Fluids given into the tissue under the skin; primarily used for giving fluids to infants and elderly people

XXII. Symptoms of edema and dehydration

A. Edema

1. Weight gain
2. Swelling of tissues, particularly feet, ankles, face, and fingers
3. Anuria
4. Oliguria

B. Dehydration

1. Thirst
2. Dry skin and mucous membranes
3. Constipation
4. Oliguria
5. Fall in blood pressure with weak, rapid pulse
6. Elevated temperature
7. Loss of tissue turgor

(NOTE: In severe dehydration, body fluid is pulled from peripheral tissues, leaving the skin loose and dry. When skin is pinched, it does not return to its original state, but remains in the folds or returns slowly.)

INFORMATION SHEET

XXIII. Dental Disease

A. Plaque is formed when foods combine with saliva and bacteria found in the mouth.

1. Plaque is a bacteria cluster and forms constantly on teeth even in the absence of food.
2. Plaque leads to both caries (tooth decay) and periodontal (gum) disease.

B. The development of caries occurs in three stages.

1. Various types of bacteria secrete acid in the presence of sugar.
2. Plaque holds acid to the tooth surface.
3. Acid begins to decalcify the enamel, starting the decay process.

C. Periodontal disease develops in three steps.

1. Bacteria in plaque secrete substances which irritate the gingiva (gums), causing inflammation.
2. When plaque is not removed, it may harden into calculus. More plaque forms on top of the calculus.
3. Inflammation progresses, forming pockets of infection between teeth and gingiva; causing loosening of teeth and their eventual loss. Pressure of thickening calculus helps separate the gingiva from the teeth.

D. The seven warning signs of periodontal disease.

1. Bleeding gingiva.
2. Bad breath or a bad taste in the mouth.
3. Soft, swollen or tender gingiva
4. Pus from the gum line on pressing.
5. Loose teeth.
6. Gingiva shrinking away from teeth.
7. Changes in the way teeth come together.

INFORMATION SHEET

XXIV. Preventive Dentistry

A. Fluoride

1. Fluoride is a natural substance found in many foods and water supplies, in various amounts. Fluoride is built into the enamel of the teeth so that they become more caries resistant.

2. Adequate fluoride content in the community water supply (one part per million of fluoride) can reduce the incidence of caries.

3. Can be made available to tooth enamel in four ways.

   a. The community water supply - most effective because it reaches everyone in the community.

   b. Toothpaste containing fluoride.

   c. Fluoride topical applications - solutions or gels may be applied directly to teeth by a dentist or dental hygienist.

   d. Fluoride tablets.

B. Professional Care

1. First visit to dentist should occur at about two years of age.

   a. This forms positive attitude,early in life,toward dental care throughout life.

   b. Many children this age have caries that need attention.

2. Visits to the dentist should be made regularly (twice a year).

C. Personal Care

1. Eat a well-balanced diet - cut down on sweets, especially between meals.

2. Brush and floss your teeth after eating (removing plaque and stimulating the gums).

3. Drink fluoridated water.

4. Have a dentist or dental hygienist regularly remove hard and soft deposits.

INFORMATION SHEET

XXV. Tooth Structure **(See TM 1, page XI-33)**

A. Each tooth has two sections:

1. Crown - the white enamel section seen above the gum line.

2. Root - the part held firmly in place in the gum and jawbone.

B. Each tooth has four types of tissue:

1. Enamel - the hard, shiny, white covering of the crown. The enamel is completely formed before the tooth erupts into the mouth. It is the hardest substance in the body.

2. Cementum - the hard, bone-like substance which covers the root and holds the tooth in place.

3. Dentin - the substance between the enamel and pulp (in the crown) and the cementum and pulp (in the root) which forms the bulk of the tooth. Dentin isn't as hard as enamel.

4. Pulp - a soft tissue which forms the living portion of the tooth. This contains the nerves and blood vessels.

C. There are four supporting structures for teeth:

1. Cementum - root surface

2. Periodontal membrane - tissue layer between cementum and bone - helps to hold the tooth in place.

3. Alveolar bone - bone surrounding tooth root.

4. Gingiva - gum tissue surrounding root.

XXVI. Types of Teeth

A. The Adult Mouth

1. In the adult mouth (permanent dentition) there are 32 teeth. There are four basic types of teeth:

   a. incisors - located in the center front of the mouth and function to cut food.

   b. cuspids - located at the corners of the mouth and function to tear food.

INFORMATION SHEET

c. bicuspids - located just behind the cuspids and function to tear and crush food.

d. molars - located in the back of the mouth and function to grind food.

B. The Child's Mouth

1. In the child's mouth (primary/deciduous dentition) there are 20 teeth. There are no bicuspids in primary dentition.

XXVII. Teeth Surfaces **(See TM 2, page XI-34)**

A. Each tooth is divided into five surfaces:

1. Facial - all surfaces facing the lips and/or cheeks. (Sometimes referred to as buccal.)

2. Lingual - all surfaces facing toward the tongue.

3. Mesial - all surfaces toward the middle (front) of the mouth.

4. Distal - all surfaces away from the middle (front of the mouth).

5. Occlusal/incisal - all biting or chewing surfaces of the teeth. Specifically: incisal edge of incisors and cuspids, occlusal surface of bicuspids and molars.

XXVIII. Sections of the Mouth

A. The teeth can be divided into four sections in the mouth:

Maxillary: teeth in the upper jaw.

Mandibular: teeth in the lower jaw.

Anterior: teeth in the front of the mouth. ie: cuspids and incisors

Posterior: teeth in the back of the mouth. ie: bicuspids and molars.

INFORMATION SHEET

B. Quadrants **(See TM 2, page XI-34)**

  1. Upper right (1)

  2. Upper left (2)

  3. Lower left (3)

  4. Lower right (4)

XXIX. Oral Anatomy **(See TM 3, page XI-35)**

  A. First premolar (bicuspid)

  B. Second premolar

  C. Glossopalatine arch

  D. Pharyngopalatine arch

  E. Palatine tonsil

  F. Second molar

  G. Lower lateral incisor

  H. Frenulum labii inferioris

  I. Gingiva

  J. Lower central incisors

  K. Lower canine (cuspid)

  L. Tongue

  M. Third molar (wisdom tooth)

  N. Fauces

  O. Uvula

  P. Soft Palate

  Q. First molar

  R. Hard palate

INFORMATION SHEET

XXX. Examination Tray

A. Mirror - to view the inside of the mouth

B. Explorer - to detect the anatomy of the tooth, defects in the tooth or pathology of the tooth, deposits on the tooth, and texture of the tooth.

C. Periodontal Probe - to measure the depth of space between the gingiva and the tooth.

D. Cotton Pliers - to grasp anything which is inaccessible by using hands or where using hands is not advisable (ie. sterile technique)

E. 2X2 gauze squares

F. Cotton tip applicators

XXXI. Adult Oral Prophalaxis Instrument Tray

A. Mirror - to view the inside of the mouth.

B. Periodontal Probe - to measure the depth of space between the gingiva and the tooth.

C. Explorer - to detect the anatomy of the tooth, defects in the tooth or pathology of the tooth, deposits on the tooth and texture of the tooth.

D. Scaler - to remove deposits on the tooth above the gingiva.

E. Curettes - to remove deposits from the tooth surface above and below the gingiva. To smooth the cementum.

F. Sharpening Stone - to restore a sharp, effective cutting edge on the instruments.

G. Cotton Pliers - to grasp anything which is inaccessible by using hands or where using hands is not advisable (ie. sterile technique).

H. 2X2 gauze squares.

I. Cotton tip applicators.

J. Rubber cup.

K. Brush.

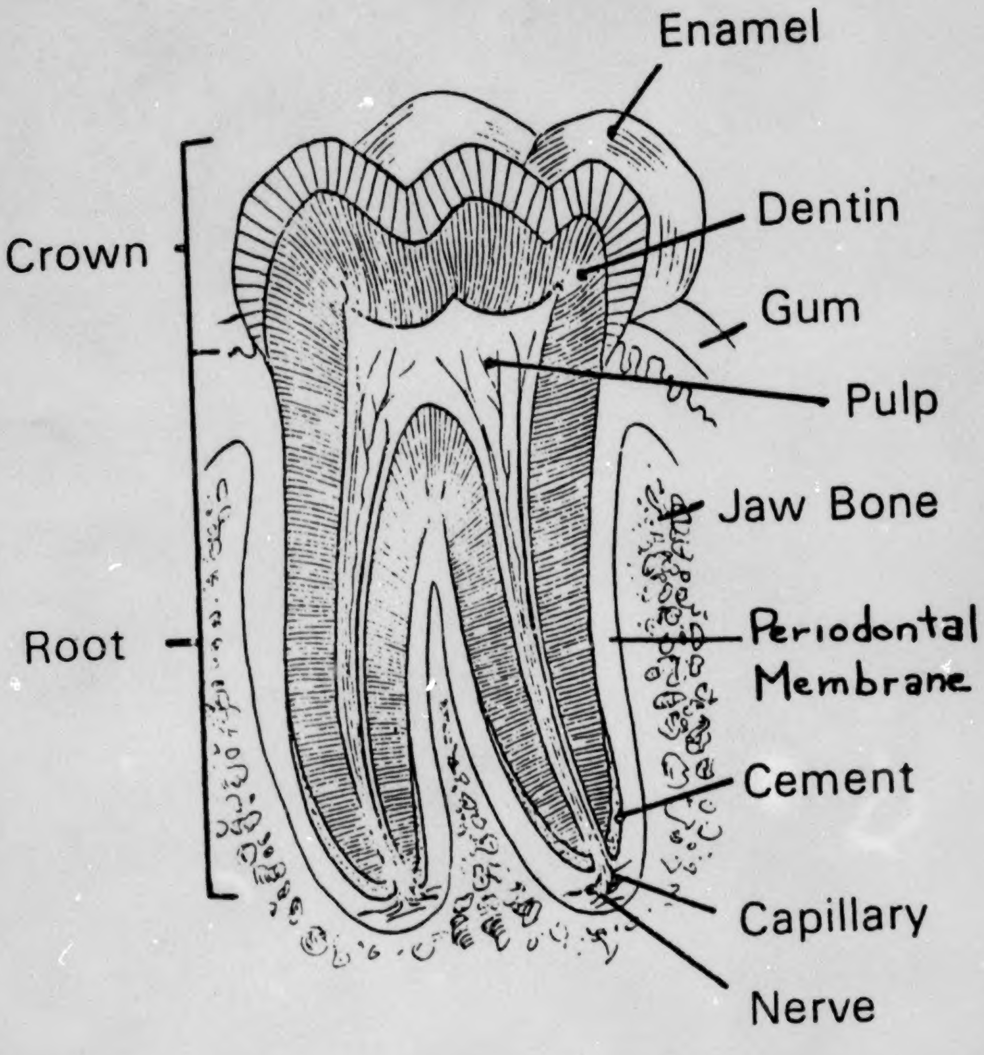
INFORMATION SHEET

L. Dappen dish with polishing paste.

M. Dental floss.

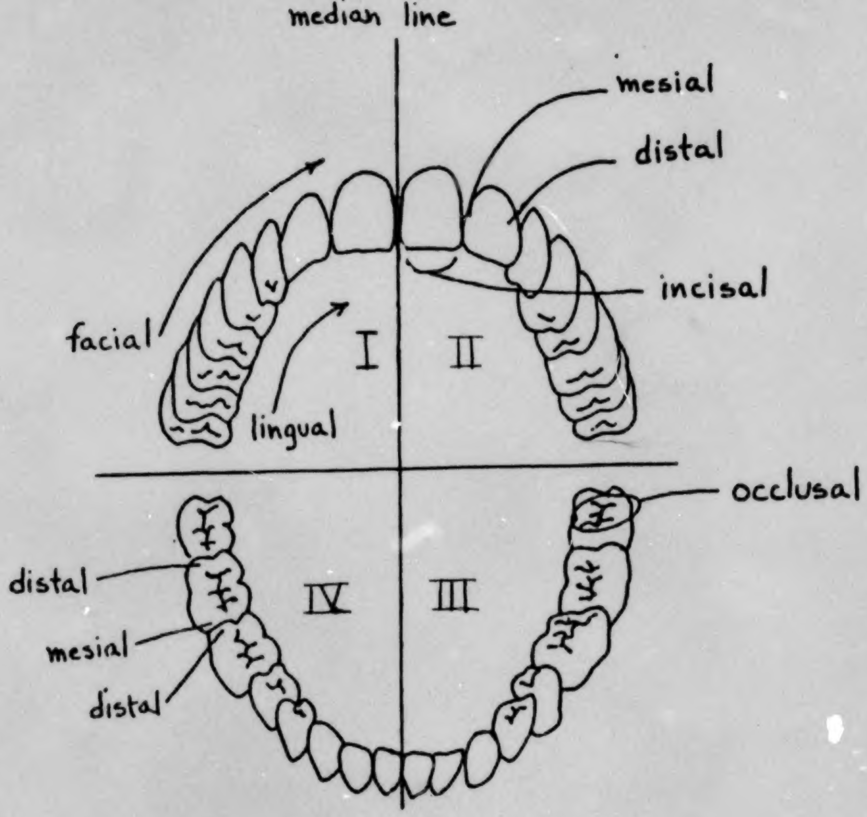
N. Evacuator tip.

TOOTH STRUCTURE


Enamel
Crown
Dentin
Gum
Pulp
Jaw Bone
Root
Periodontal Membrane
Cement
Capillary
Nerve

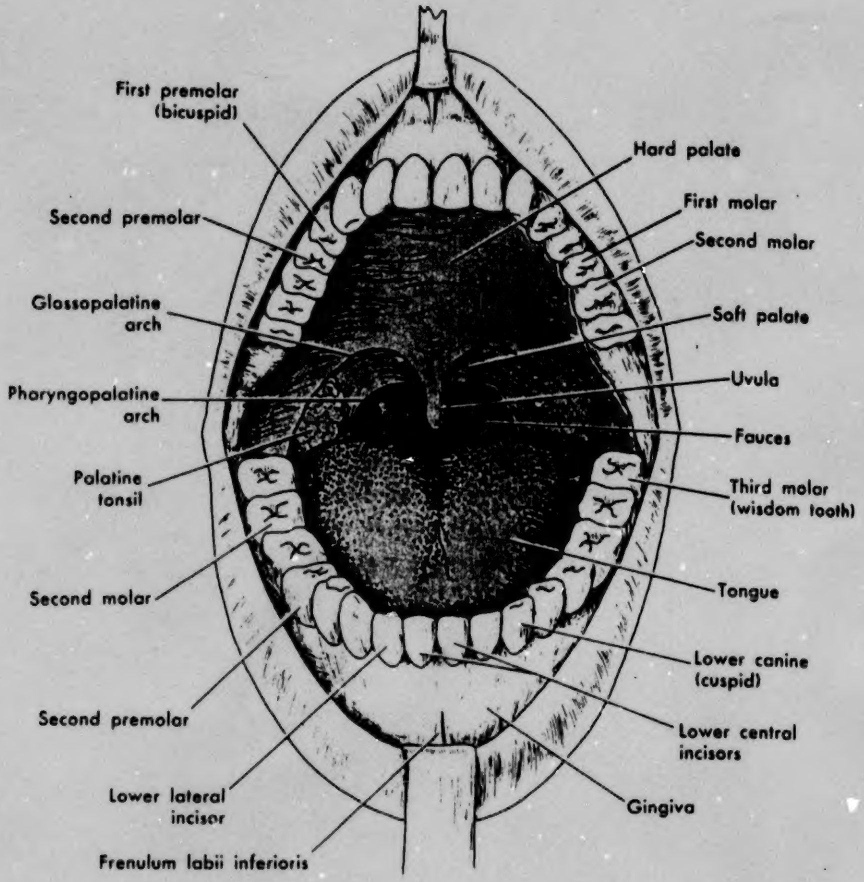
TM 1

SURFACES OF TEETH


median line
mesial
distal
incisal
facial
lingual
I
II
occlusal
distal
mesial
distal
IV
III

TM 2

ORAL CAVITY

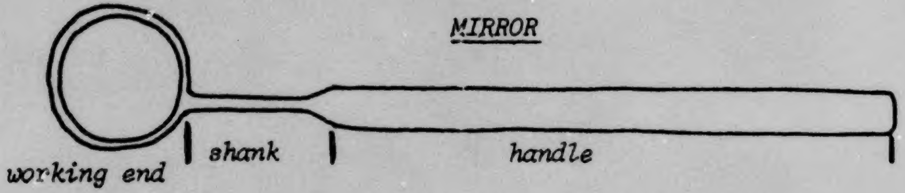

First premolar (bicuspid)
Hard palate
Second premolar
First molar
Second molar
Glossopalatine arch
Soft palate
Pharyngopalatine arch
Uvula
Fauces
Palatine tonsil
Third molar (wisdom tooth)
Second molar
Tongue
Lower canine (cuspid)
Second premolar
Lower central incisors
Lower lateral incisor
Gingiva
Frenulum labii inferioris

TM 3

From Brooks, Stewart M.: Integrated Basic Science, ed. 4, St. Louis, 1979 The C.V. Mosby Co.

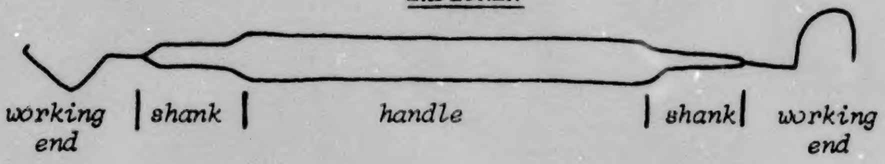
INITIAL APPOINTMENT EXAMINATION TRAY

MIRROR


working end
shank
handle

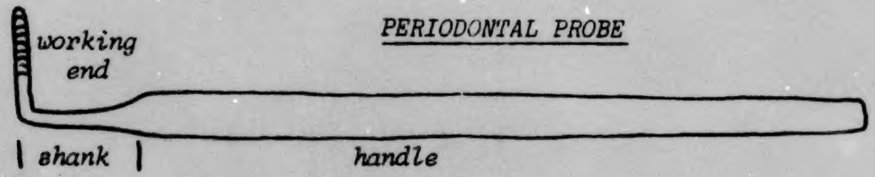
USE: To view the inside of the mouth.

EXPLORER


working end
shank
handle
shank
working end

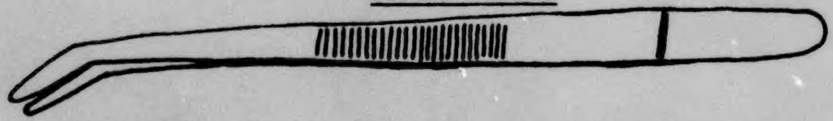
USE: To detect the anatomy of the tooth, defects in the tooth or pathology of the tooth, deposits on the tooth, and texture of the tooth.

PERIODONTAL PROBE


working end
shank
handle

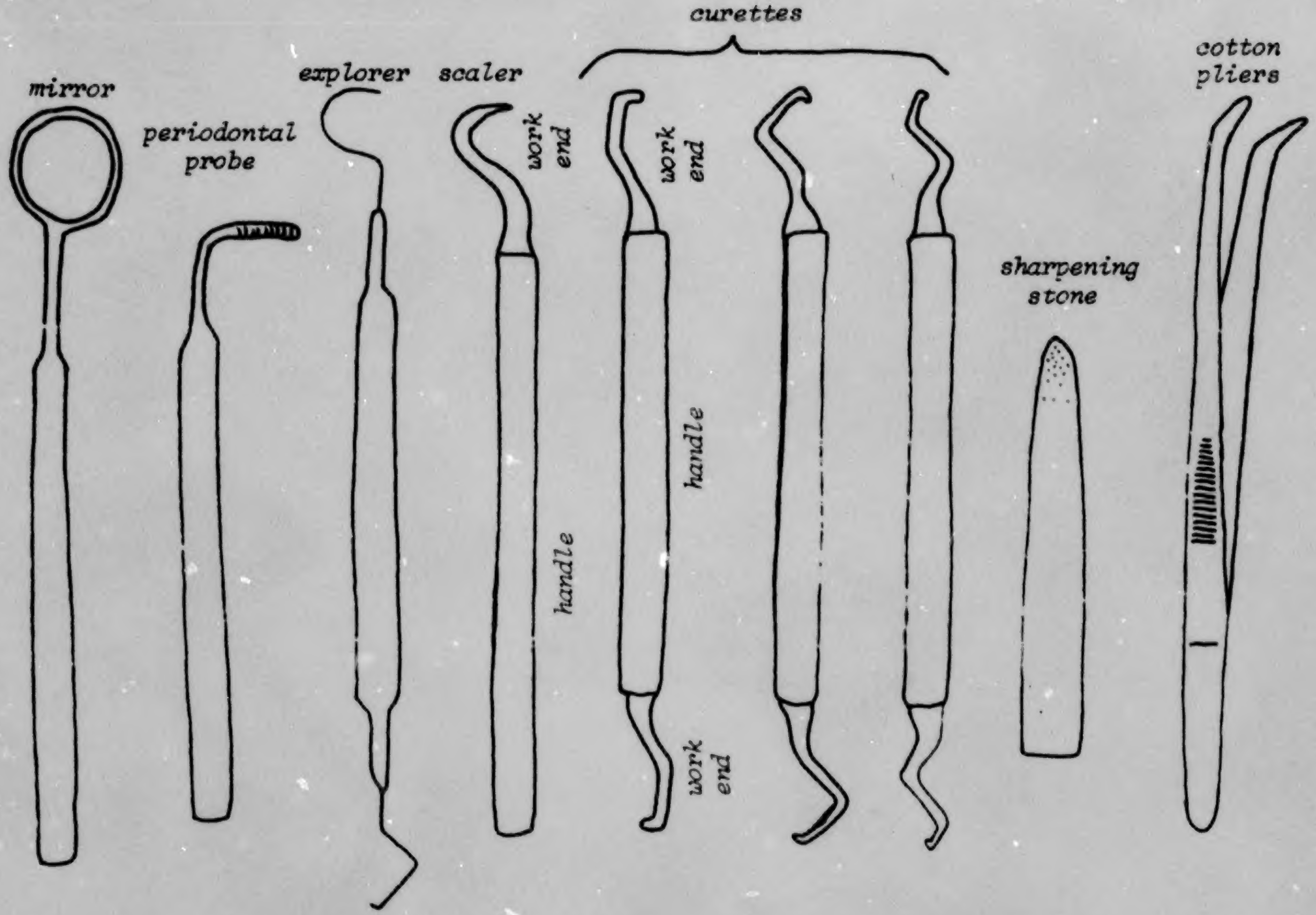
USE: To measure the depth of space between the gingiva and the tooth. (the lines on the working end denote millimeters)

COTTON PLIERS



USE: To grasp anything which is inaccessible by using hands or where using hands is not advisable (ie. sterile technique)

ADULT ORAL PROPHYLAXIS TRAY


mirror
periodontal probe
explorer
scaler
work end
handle
curettes
work end
handle
work end
sharpening stone
cotton pliers

TM 5

NUTRITION/DENTAL HEALTH
UNIT XI

ASSIGNMENT SHEET #1 -- WRITE AN ESSAY ON A CURRENT NEWS ITEM ABOUT NUTRITION

Many current issues and problems concerning today's nutrition have been brought to the public's attention through the various news media. Some of the issues have been controversial and have been studied in depth by the government. Using various news sources, write an essay about a current article on nutrition that interests you.

Examples: Fad diets, dangers of additives, new foods, and new methods of preparing foods.

NUTRITION/DENTAL HEALTH
UNIT XI

ASSIGNMENT SHEET #2 -- MAKE A FOOD POSTER

Collect items to make a food poster.

Materials: Pictures from magazines, pamphlets or newspapers

Scissors

Paste or glue

Heavy paper or poster board

Felt-tip pens for lettering

Other equipment as needed for individual creativity

Work in groups of three or four to prepare a food poster using one of the following subjects:

Principal sources of carbohydrates

Snack foods that are nutritious and those that contain mostly "empty" calories

Sources of incomplete proteins

Sources of complete proteins

Foods containing visible fats

Foods containing invisible fats

Four basic food groups (on one poster or on four separate posters)

(NOTE: Another subject may be selected with the approval of the instructor.)

NUTRITION/DENTAL HEALTH
UNIT XI

ASSIGNMENT SHEET #3 -- MEASURE INTAKE

(NOTE: Average oral intake for an adult is 2,000 to 3,000 cm^3 (cc) of fluid per day.)

Using the following materials: cups, bowls, glasses, pitcher, graduate, water, and ice chips, perform the tasks below.

(NOTE: Container sizes vary with each institution. The instructor will provide the correct measurements for the containers used. A standard of basic liquid measures is given below.)

U.S. CUSTOMARY LIQUID MEASURE WITH EQUIVALENT METRIC MEASUREMENTS

U.S. Customary		Metric
¼ teaspoonful	=	1 cc
1 teaspoonful	=	4 cc
1 ounce	=	30 cc
1 cup	=	240 cc
1 pint	=	500 cc
1 quart	=	1,000 cc

1. Fill containers with water

2. Measure water from each container with the graduate and record below

   Juice glass __________ cm^3 (cc)

   Water glass __________ cm^3 (cc)

   Paper cup ____________ cm^3 (cc)

   Soup bowl ____________ cm^3 (cc)

   Pitcher ______________ cm^3 (cc)

3. Fill a juice glass with ice chips, melt the chips, measure, and record below

   Juice glass of ice chips __________ cm^3 (cc)

   (NOTE: 1 oz. of ice usually equals 15 cc melted liquid. Take into consideration whether the ice is chipped or cubed.)

4. Figure intake for the meal described below using the measurements obtained above.

(NOTE: Keep a paper and pencil at the patient's bedside to record intake and output. Most institutions will have their own forms to calculate the twenty-four hour amounts.)

Soup -- 1/2 taken

Milk -- 2/3 taken

Juice -- 1 glass

Jello -- 1 serving

Ice chips -- 1/2 paper cup

Coffee -- 1/3 cup

Total Intake __________ cm^3 (cc)

(NOTE: Physician may restrict or encourage fluid intake; it is the health assistant's responsibility to know which has been ordered. When intake and output is ordered, accuracy is very important, and the patient and family should be informed of the procedure. Fluids which must be measured for output include urine, fluid from suction devices, vomitus, and estimated amounts of hemorrhage, drainage, or perspiration.

NUTRITION/DENTAL HEALTH
UNIT XI

ASSIGNMENT SHEET #4 -- FOOD AND FLUID INTAKE

Have students keep a record of their food and fluid intake for three consecutive days. At the end of the third day, ask students to examine and determine the value of their diets, using the four basic food groups and calorie charts.

NUTRITION/DENTAL HEALTH
UNIT XI

ASSIGNMENT SHEET #5 -- PREVENTIVE DENTISTRY

DIRECTIONS: Skim over these questions on preventive dentistry. Do you know the answers?

1. What is preventive dentistry? ________________

2. What is a preventive dental program? ________________

3. What is the goal of a preventive dental exam? ________________

4. Who are the many people who have responsibility in preventive dentistry?

5. What are dental caries and what are methods of prevention?

6. What is periodontal disease and what are methods of prevention?

7. What is fluoride and how does it contribute to preventive dental health?

____

____

____

8. What role does nutrition have in dental health and what are healthful dental practices?

____

____

____

9. How important is the dental exam and how often should one see a dentist?

____

____

10. What are the basic functions of the teeth and why are healthy teeth important?

____

____

____

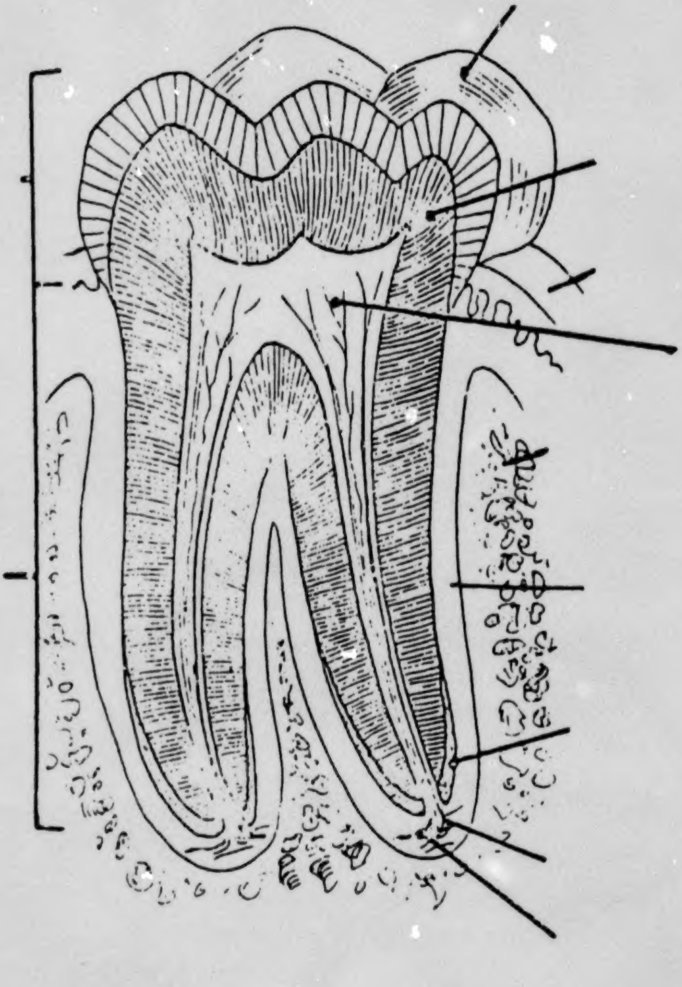
BRAIN TICKLER: When is it important to apply preventive dental health measures? Consider the development of teeth before and after birth.

NUTRITION/DENTAL HEALTH
UNIT XI

ASSIGNMENT SHEET #6 -- PARTS OF A TOOTH

Label parts of the tooth on the tooth structure diagram.

TOOTH STRUCTURE

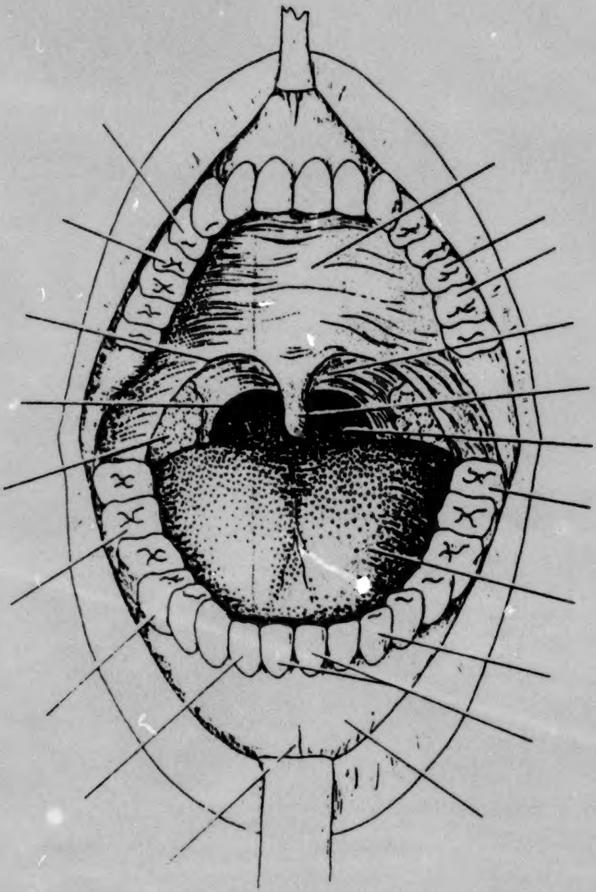


NUTRITION/DENTAL HEALTH
UNIT XI

ASSIGNMENT SHEET #7 -- PARTS OF THE ORAL CAVITY

Label parts of the oral cavity on the oral cavity diagram.

ORAL CAVITY



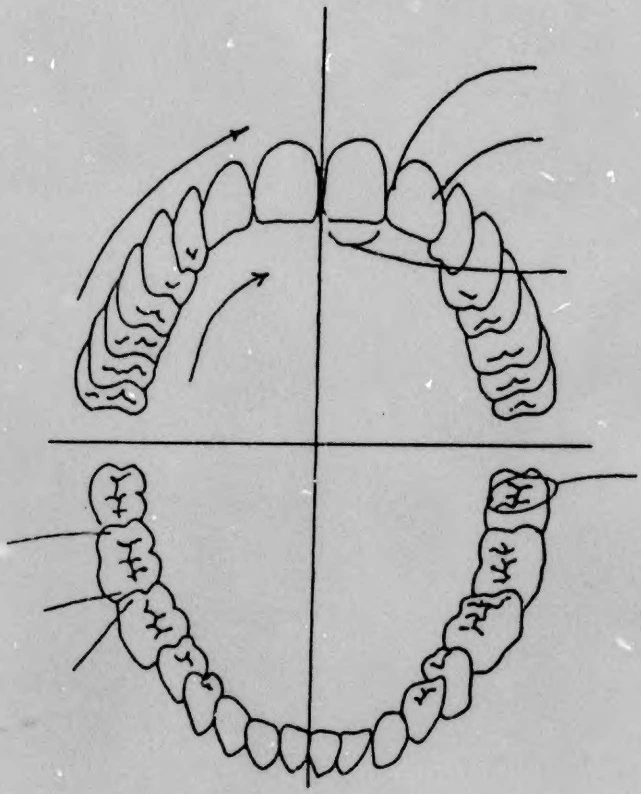
From Brooks, Stewart M.: Integrated Basic Science, ed. 4, St. Louis, 1979, The C.V. Mosby Co.

NUTRITION/DENTAL HEALTH
UNIT XI

ASSIGNMENT SHEET #8 -- SURFACES OF THE TEETH/QUADRANTS OF THE MOUTH

Label surfaces of the teeth/quadrants of the mouth on the surfaces of teeth diagram.

SURFACES OF TEETH



NUTRITION/DENTAL HEALTH
UNIT XI

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1, #2, #3, #4, #5

Evaluated to the satisfaction of the instructor.

Assignment Sheet #6 - Labeled diagram TM 1 (page XI-33)

Assignment Sheet #7 - Labeled diagram TM 3 (page XI-35)

Assignment Sheet #8 - Labeled diagram TM 2 (page XI-34)

NUTRITION/DENTAL HEALTH
UNIT XI

UNIT TEST

1. Match terms associated with nutrition to their correct definitions by placing the correct numbers in the appropriate blanks.

_____ a. Chemical compounds which are components of proteins

_____ b. Condition in which there is an excessive amount of fat in the body

_____ c. Process of changing food in the mouth, stomach, and intestines so that it can be absorbed by the blood and used by the cells

_____ d. Food and drink consumed each day

_____ e. Science which deals with the use of foods in health and disease

_____ f. Oily substance not soluble in water

_____ g. Study of foods and their relation to health

_____ h. Substance that the body uses to yield energy, to build or repair tissues, and/or to regulate body processes

_____ i. Fatlike, pearly substance found in animal fat, oils, brain tissue, milk, yolks of eggs, liver, kidneys, and adrenal glands

_____ j. Metric unit of weight

_____ k. Normal constituent of gastric juices produced by glands in the stomach

_____ l. Gradual decay of enamel and dentin of a tooth

_____ m. Chemical compound found in food

1. Nutrition
2. Nutrient
3. Food
4. Dietetics
5. Diet
6. Digestion
7. Amino acids
8. Hydrochloric acid
9. Lipid
10. Dental caries
11. Gram
12. Obesity
13. Cholesterol

2. Name functions of foods.

   a. ______________________________

   b. ______________________________

   c. ______________________________

   d. ______________________________

3. Name four reasons why good nutrition is essential.

   a. ______________________________

   b. ______________________________

   c. ______________________________

   d. ______________________________

4. Select from the list below factors that influence food habits by placing an "X" in the appropriate blanks.

   _____ a. Marital status

   _____ b. Income

   _____ c. Age

   _____ d. Personal attitudes

   _____ e. Nationality and race

   _____ f. Religious influence

   _____ g. Weather

   _____ h. Region and availability

   _____ i. Libido

   _____ j. Genetic make-up

5. Name the two kinds of metabolism.

   a. ______________________________

   b. ______________________________

6. Name the basic nutrients.

a. ____________________

b. ____________________

c. ____________________

d. ____________________

e. ____________________

f. ____________________

7. Name the four basic food groups and the suggested servings of each.

a. ____________________

b. ____________________

c. ____________________

d. ____________________

8. Classify primary causes of nutritional deficiency given below by placing an "I" for inadequate intake and a "U" for poor use of ingested food in the blanks provided.

_____ a. Food allergies

_____ b. Lack of proper food

_____ c. Alcoholism

_____ d. Metabolic disturbances

_____ e. Poor food habits

_____ f. Anorexia due to disease

_____ g. Disease of digestive tract

_____ h. Faulty therapeutic diet

_____ i. Diarrhea

_____ j. Faulty absorption in the intestinal tract

_____ k. Consumption of nutrient deficient food

9. Match terms associated with nutritional deficiency on the right to their correct definitions by placing the appropriate numbers in the blanks provided.

_____ a. Disease due to lack of vitamins in diet

_____ b. Lack of necessary food substances in body

_____ c. Deficiency disease due to insufficient vitamin C; characterized by loss of energy, pain in limbs, weakness, and edema

_____ d. Lack or loss of appetite

_____ e. Insufficient amount of one or more essential nutrients in diet

_____ f. Deficiency disease due to insufficient niacin and protein; characterized by dermatitis, diarrhea, anemia, and mental symptoms

_____ g. Toxicity caused by excessive amounts of one or more vitamins

_____ h. Softened bone condition in children resulting from deficient deposits of calcium in bone-forming cartilages

1. Nutritional deficiency
2. Malnutrition
3. Anorexia
4. Avitaminosis
5. Scurvy
6. Rickets
7. Pellagra
8. Hypervitaminosis

10. Classify the vitamins listed below by placing an "F" for fat soluble vitamins and a "W" for water soluble vitamins in the blanks provided.

_____ a. Vitamin A

_____ b. Vitamin B Complex

_____ c. Vitamin C

_____ d. Vitamin D

_____ e. Vitamin E

_____ f. Vitamin K

11. Name the appropriate number of calories in one gram of each nutrient listed below.

    a. Protein ______________________________

    b. Carbohydrate ______________________________

    c. Fat ______________________________

12. Match selected nutrients on the right to the correct percentage needed in the daily diet.

_____ a.	10-15 percent	1. Carbohydrates
_____ b.	25-30 percent	2. Protein
_____ c.	40-50 percent	3. Fat

13. List five factors that affect energy requirements.

    a. ______________________________

    b. ______________________________

    c. ______________________________

    d. ______________________________

    e. ______________________________

14. Arrange in order the steps in determining calorie requirements by placing a "1" for the first step, a "2" for the second step, and so on in the blanks provided.

    _____ a. Multiply ideal weight by calories needed

    _____ b. Determine calories needes

    _____ c. Determine ideal weight

15. Match terms associated with evaluation of foods to their correct definitions by placing the appropriate numbers in the blanks provided.

_____ a.	Profuse perspiration	1. Condiment
_____ b.	Condition in which body tissues retain excessive amount of tissue fluid	2. Mislabeling
		3. Dehydrated
_____ c.	Food in which nutrients lost in processing are replaced	

_____ d. Fullness of tissue related to amount of fluid surrounding the cells

_____ e. Incorrect or incomplete information on a label

_____ f. Diminished urinary output

_____ g. Excessive accumulation of fluid in peritoneal cavity

_____ h. Food improved in nutritive value by adding vitamins and minerals during processing

_____ i. Pertaining to food with water removed

_____ j. Seasoning; ingredient added to enhance flavor of food

_____ k. Agent or medication that increases urinary output

_____ l. Measuring device marked in cm^3 (cc's)

_____ m. Accurate record of all liquids taken by patient and accurate measurement of all urine, vomitus, drainage and other liquid lost from body

_____ n. Food with more nutrients added than it has in its natural state

_____ o. Element added to natural food usually to improve or preserve

_____ p. Modifications of patient's normal diet to meet requirements created by disease or injury

_____ q. Space between layers of peritoneum

_____ r. Supression of urinary output

4. Restored
5. Enriched
6. Intake or output
7. Edema
8. Ascites
9. Oliguria
10. Diaphoresis
11. Diuretic
12. Graduate
13. Tissue turgor
14. Fortified
15. Additive
16. Diet therapy
17. Peritoneal cavity
18. Dehydration
19. Polyuria
20. Anuria

_____ s. Condition that results when fluid output exceeds fluid intake

_____ t. Excessive secretion and excretion of urine

16. Classify common types of poisoning by foods by placing in the appropriate blanks an "F" for foods with chemical poisons, an "A" for chemical poisons added to foods, and a "D" for disease producing organisms in food.

_____ a. Silver polishes which contain cyanide

_____ b. Foods improperly cooked or stored

_____ c. Green part of white potatoes

_____ d. Rhubarb leaves

_____ e. Sprays and insecticides used in and around the house

_____ f. Foods contaminated by food handlers

_____ g. Insecticides used to spray growing fruits and vegetables

_____ h. Products from diseased animals

_____ i. Toxic mushrooms

17. Classify the following illnesses transmitted through foods by placing an "A" for illnesses transmitted by animals, an "FH" for illnesses transmitted by food handlers and shoppers, and an "IP" for illnesses transmitted through improper preparation or storage of food in the blanks provided. Each illness may have more than one classification.

_____ a. Scarlet fever

_____ b. Botulism

_____ c. Typhoid fever

_____ d. Tuberculosis

_____ e. Dysentery

_____ f. Clostridium perfringens

_____ g. Staphyloccoccal infections

_____ h. Salmonella infections

_____ i. Tularemia

_____ j. Diphtheria

_____ k. Brucellosis

_____ l. Common colds

_____ m. Influenza

_____ n. Worm infestation

_____ o. Infectious hepatitis

_____ p. Intestinal pathogens

_____ q. Streptococcal infections

_____ r. Staphylococcal infections

18. Classify the characteristics of the five standard diets listed below by placing a "CSL" for clear or surgical liquid diet, an "FML" for full or medical liquid diet, an "S" for soft diet, an "LC" for light or convalescent diet, and an "F" for full diet in the blanks provided.

_____ a. Can be planned to be nutritionally adequate

_____ b. Based on basic four food groups; normal diet

_____ c. Used during acute infection for patients having difficulty chewing or swallowing and for those with gastrointestinal disturbances

_____ d. Composed mainly of water and carbohydrates; nutritionally inadequate

_____ e. Nutritionally adequate

_____ f. Used after surgery or to replace fluids lost by vomiting or diarrhea

_____ g. May be used for an indefinite period if physical activity is limited; may be deficient in iron

_____ h. Usually given between liquid and full diets for patients who need easily chewed foods

_____ i. Usually given to preoperative and postoperative patients and those with minor illnesses

_____ j. Used most frequently and given to all patients whose condition does not require a special diet

_____ k. Includes all foods

_____ l. May include all liquids, such as strained cream soups, milk, strained cereals, plain puddings, and plain ice cream and sherbet

_____ m. Includes tea or black coffee, fat-free broth, strained vegetables or fruit juices, gelatin, and carbonated beverages

_____ n. Includes all foods, except fried foods, nuts, whole-grain cereals or breads, fibrous vegetables, pastries, pickles, and tough meats

_____ o. Includes all foods, except fried foods, pastries, fibrous vegetables, and nuts

19. Name purposes of a therapeutic diet.

a. ____

b. ____

c. ____

d. ____

e. ____

20. Complete the chart below on therapeutic or modified diets. Write the appropriate responses in the blanks provided.

DIET	FOODS ALLOWED	FOODS OMITTED	CONDITIONS
A.	Only enough carbohydrate to maintain health and carry on activities Dietetic foods	Sugar and sugar-sweetened foods All jellies and candies Pastries and desserts Alcoholic beverages	Diabetes mellitus Hyperinsulinism (Nutritionally adequate)
Low Fat	Increased carbohydrates and proteins Skim milk Sherbet Minimum amount butter Vegetables and fruits as desired	B.	Gall bladder and liver disease Obesity Heart conditions (Deficient in fat-soluble vitamins)
High Iron	Normal diet with high-iron foods Liver and organ meats Red meats All dried fruits Soybeans Molasses		C.
Low Cholesterol	Lean muscle meats, fish Poultry (without skin or fat) Skim milk Margarine made of unsaturated fats Liquid vegetable oil	Organ meats Egg yolk Shellfish Desserts made with cream, whole milk Cream, butter	D.
High Calorie (4000 calories)	Emphasis on increase of calories rather than increase of nutrients Full meals with high calorie between-meal snacks	E.	For persons ten percent or more below desired weight for age, height, and sex (Diet adequate in all nutrients)
High Protein (up to 100 grams)	F.	Fatty foods	Children and adolescents who need additional protein for growth Pregnancy and lactation Following surgery Illnesses resulting in protein loss (Nutritionally adequate)
G.	One ounce daily-meat, poultry fish, or cheese One egg daily One cup milk daily Butter as desired Fruits and vegetables as desired	Meat over one ounce Puddings unless made with milk allowance Cream soups unless prepared with milk allowance Except dried peas and beans	Kidney conditions Liver ailments Heart conditions (Nutritionally inadequate in protein, calcium, iron, and all vitamins except vitamin C)
High Carbohydrate	H.	Fried foods Fatty meats Pastries Alcoholic beverages Spices and condiments	Preparation for surgery Kidney disease Toxemia of pregnancy Liver disease (Nutritionally adequate)
High Residue	Increased whole grain cereals Increased fruits, vegetables	I.	Atonic constipation (Nutritionally adequate)
Bland	Generous amounts of milk and protein foods Refined cereals Simple desserts Ripe banana, applesauce, baked apple, peaches, pears Decaffeinated coffee, weak tea Carrots, beets, string beans, spinach, squash without seeds, asparagus tips, peas	Fried foods Meats with course fiber, tough gristle Coarse foods Highly seasoned foods Fruits and vegetables other than allowed Pastries and candies Alcoholic beverages	J.
K.	Refined cereals, breads Soft cheese (cottage, cream) Tender meats Pureed vegetables Applesauce, canned peaches, pears, white cherries, pureed apricots, prunes, plums, fruit juices Plain pudding, angel cake, sponge cake	Fibrous meats Fresh fruits and vegetables Fried foods Whole grain cereals, breads Spices and condiments Pastries and candies Alcoholic beverages	Before and after intestinal surgery Severe diarrhea Colitis, diverticulitis Hemorrhoid (Deficient in vitamins)
L.	Natural foods prepared without salt Milk, meat in limited amounts Fruits and vegetables without salt Unsalted bread Desserts prepared without salt	Processed foods Salt, many seasonings Monosodium glutamate Baking powder, baking soda Brine prepared foods Food preservatives containing sodium Cultured buttermilk	Kidney diseases Cardiovascular disorders Hypertension (Nutritionally adequate if well planned)

21. Match ways of administering fluids to patients to their correct definitions by placing the appropriate numbers in the blanks provided.

_____ a. Fluids given into the vein

_____ b. Food and fluids taken by mouth or by gastric tube

_____ c. Fluids given into the tissue under the skin; primarily used for giving fluids to infants and elderly persons

1. Orally
2. Intravenously
3. Hypodermoclysis

22. Distinguish between symptoms of edema and dehydration in the blanks provided by placing an "E" for edema symptoms and a "D" for dehydration symptoms. There may be more than one classification for each symptom.

_____ a. Oliguria

_____ b. Constipation

_____ c. Dry skin and mucous membranes

_____ d. Elevated temperature

_____ e. Weight gain

_____ f. Swelling of tissues, particularly feet, ankles, face, and fingers

_____ g. Loss of tissue turgor

_____ h. Fall in blood pressure with weak, rapid pulse

_____ i. Anuria

_____ j. Thirst

23. Write an essay on a current news item about nutrition.

24. Make a food poster.

25. Measure intake.

26. Evaluate food and fluid intake for three consecutive days.

(NOTE: If the above activities have not been accomplished prior to the test, ask the instructor when they should be completed.)

27. List the seven warning signals of periodontal disease.

a. ____

b. ____

c. ____

d. ____

e. ____

f. ____

g. ____

28. Review the concept of preventive dentistry.

(NOTE: If the above activity has not been accomplished prior to the test, ask the instructor when it should be completed.)

29. Name the two sets of teeth and tell how many teeth are included in each set.

______________________________ __________

______________________________ __________

30. Label a diagram of the tooth and adjacent structures.

31. Label a diagram of the surfaces of the teeth and quadrants of the mouth.

32. Label on a diagram the parts of the oral cavity.

33. Match the following:

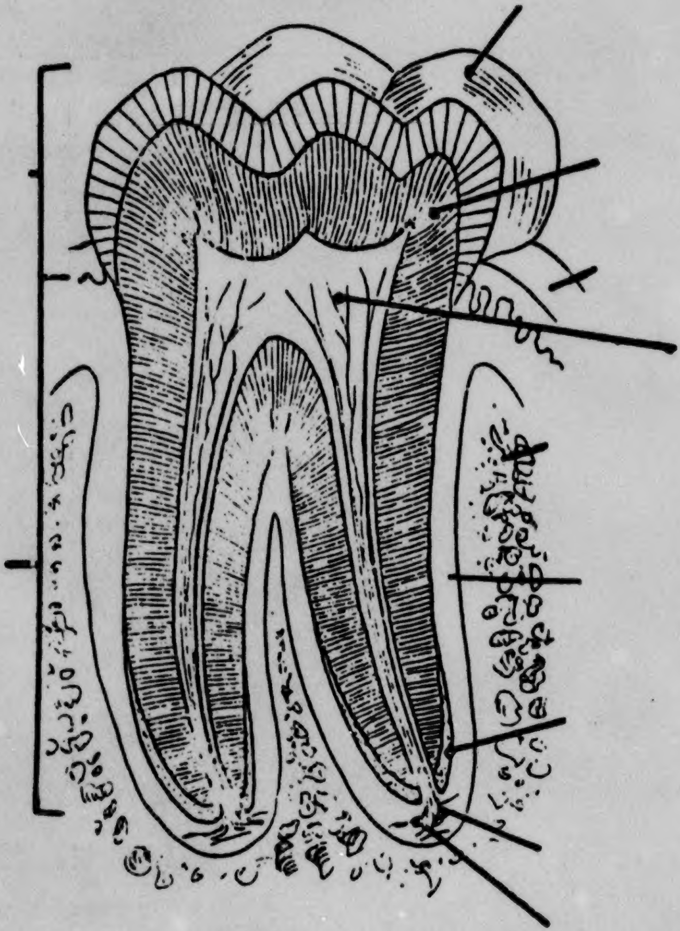
a. Maxillary ____ 1. Teeth in the lower jaw

b. Mandibular ____ 2. Teeth in the back of the mouth

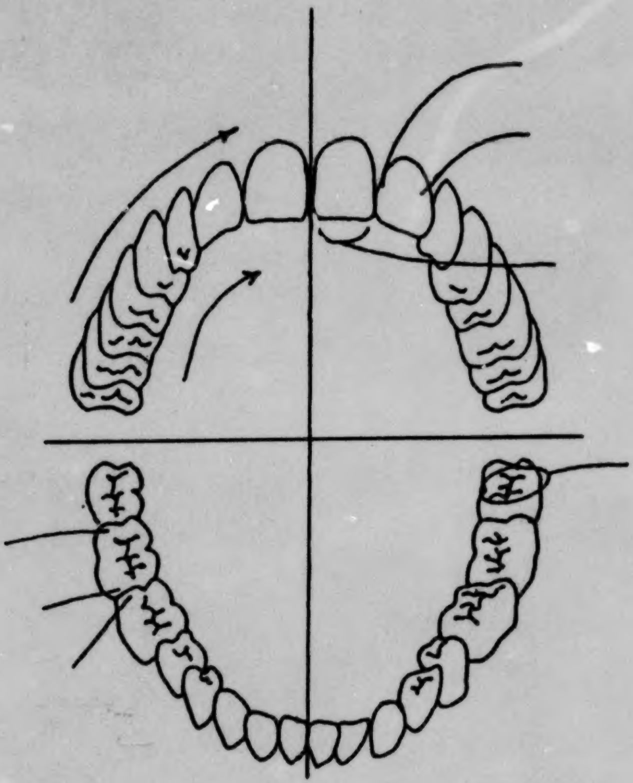
c. Anterior ____ 3. Teeth in the upper jaw

d. Posterior ____ 4. Teeth in the front of the mouth

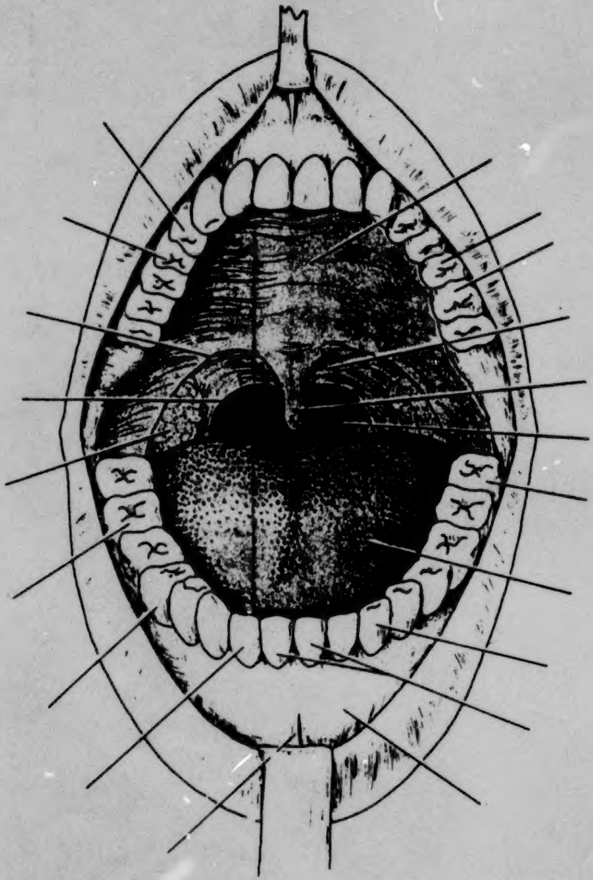
TOOTH STRUCTURE



SURFACES OF TEETH



ORAL CAVITY



From Brooks, Stewart M.: Integrated Basic Science, ed. 4, St. Louis, 1979, The C.V. Mosby Co.

34. Match these dental terms with their correct definitions.

TERMS		DEFINITIONS/FUNCTIONS
a. incisal	_____	1. cut food
b. facial	_____	2. teeth in the child's mouth
c. lingual	_____	3. surfaces toward the middle of mouth
d. mesial	_____	4. tear and crush food
e. distal	_____	5. teeth in the adult mouth
f. occlusal	_____	6. surfaces facing lips
g. incisors	_____	7. surfaces facing the tongue
h. cuspids	_____	8. tear food
i. bicuspids	_____	9. surfaces away from the middle
j. molars	_____	10. grind food
k. permanent dentition	_____	11. all biting and chewing surfaces
l. primary dentition		

35. Match the instruments listed below with their correct use by drawing lines between them.

INSTRUMENT	USE
a. Mirror	1. To measure the depth of space between the gingiva and the tooth.
b. Sharpening Stone	2. To detect the anatomy of the tooth, defects on the tooth, texture of the tooth, pathology of the tooth and deposits on the tooth.
c. Scaler	3. To view the inside of the mouth.
d. Periodontal Probe	4. To remove deposits above the gingiva.
e. Curettes	5. To grasp anything inaccessible by using hands or where using hands is not advisable.
f. Explorer	6. To remove deposits from the tooth surface above and below the gingiva and to smooth the cementum.
g. Cotton Pliers	7. To restore sharp cutting edges on the instruments.

36. For each instrument tray, place the correct letters for the instruments you would find on the tray.

EXAMINATION TRAY

ADULT PROPHYLAXIS TRAY

INSTRUMENTS

A. Mirror
B. Curettes
C. Periodontal Probe
D. Scaler
E. Sharpening Stone
F. Cotton Pliers
G. Explorer

NUTRITION/DENTAL HEALTH
UNIT XI

ANSWERS TO TEST

1. a. 7
   b. 12
   c. 6
   d. 5
   e. 4
   f. 9
   g. 1
   h. 3
   i. 13
   j. 11
   k. 8
   l. 10
   m. 2

2. a. Providing heat
   b. Promoting growth
   c. Repairing tissue
   d. Regulating body processes

3. Any four of the following:
   a. Promotes a healthier body and mind
   b. Provides greater personal energy and vitality
   c. Promotes resistance to illness
   d. Speeds healing
   e. Produces stronger bones and muscles
   f. Promotes good posture
   g. Helps individual feel and sleep better

4. b,c,d,e,f,h

5. a. anabolism
   b. catabolism

6. a. Protein
   b. Carbohydrates
   c. Fat
   d. Minerals
   e. Vitamins
   f. Water

7. a. Milk -- Two servings
   b. Meat -- Two or more servings
   c. Bread and cereal -- four or more servings
   d. Fruit and vegetables -- Four or more servings, including one citrus fruit

8. a. U
   b. 1
   c. 1
   d. U
   e. 1
   f. 1
   g. U
   h. 1
   i. 1
   j. U
   k. 1

9. a. 4
   b. 2
   c. 5
   d. 3
   e. 1
   f. 7
   g. 8
   h. 6

10. a. F
    b. W
    c. W
    d. F
    e. F
    f. F

11. a. Four

    b. Four

    c. Nine

12. a. 2

    b. 3

    c. 1

13. Any five of the following:

    a. Physical activity

    b. Age

    c. Size

    d. Sex

    e. Endocrine secretions

    f. Body temperature

    g. Medications

    h. Emotions

    i. External climate

    j. Sleep

    k. Nutrition

    l. Pregnancy

14. a. 3

    b. 2

    c. 1

15. a. 10

    b. 7

    c. 4

    d. 13

    e. 2

    f. 9

    g. 8

    h. 5

    i. 3

    j. 1

    k. 11

    l. 12

    m. 6

    n. 14

    o. 15

    p. 16

    q. 17

    r. 20

    s. 18

    t. 19

16. a. A
b. D
c. F
d. F
e. A
f. D
g. A
h. D
i. F

17. a. A,FH
b. IP
c. FH
d. A,FH
e. A
f. IP
g. FH
h. A
i. A
j. FH
k. A
l. FH
m. FH
n. A
o. A,FH
p. FH
q. A,IP
r. IP

18. a. S
b. F
c. FML
d. CSL
e. LC
f. CSL
g. FML
h. S
i. LC
j. F
k. F
l. FML
m. CSL
n. S
o. LC

19. a. Regulation of the amount of specific foods in metabolic disorders
b. Increase or decrease of body weight by adding or limiting calories
c. Prevention or restriction of edema by restricting sodium intake
d. Aiding digestion by avoiding foods that irritate the digestive tract
e. Assisting organ to regain and/or maintain its normal function

20. a. Low carbohydrate

b. All fats limited; fried foods, pork, ice cream, pastries

c. Nutritional anemia; pernicious anemia (nutritionally adequate)

d. Atherosclerosis, coronary circulation diseases (nutritionally adequate)

e. Fatty foods and bulky foods; foods patient dislikes

f. Added amounts of meat, milk, cheese, eggs, fish, and poultry; additional nonfat dry milk

g. Low protein (approximately 40 grams)

h. Emphasis on carbohydrate foods; full meals with high carbohydrate snacks

i. No foods are omitted

j. Gastric ulcer; spastic constipation, colitis (nutritionally adequate if well planned)

k. Low residue

l. Sodium restricted

21. a. 2

b. 1

c. 3

22. a. E,D

b. D

c. D

d. D

e. E

f. E

g. D

h. D

i. E

j. D

23. Evaluated to satisfaction of instructor

24. Evaluated to satisfaction of instructor

25. Evaluated to satisfaction of instructor

26. Evaluated to satisfaction of instructor

27. a. bleeding gingiva

    b. bad breath or a bad taste in the mouth

    c. soft, swollen or tender gingiva

    d. pus from the gum line on pressing

    e. loose teeth

    f. gingiva shrinking away from teeth

    g. changes in the way teeth come together

28. Evaluated to satisfaction of instructor

29. Permanent dentition 32 teeth
    Primary/deciduous dentition 20 teeth

30. See TM 1 (Page XI-33)

31. See TM 2 (Page XI-34)

32. See TM 3 (Page XI-35)

33. b 1.
    d 2.
    a 3.
    c 4.

34. g 1.
    l 2.
    d 3.
    i 4.
    k 5.
    b 6.
    c 7.
    h 8.
    e 9.
    j 10.
    f 11.

35. d 1.

f 2.

a 3.

c 4.

g 5.

e 6.

b 7.

36. Examination Tray:
A. Mirror
G. Explorer
C. Periodontal Probe
F. Cotton Pliers

Adult Prophylaxis Tray:
A. Mirror
B. Curettes
C. Periodontal Probe
D. Scaler
E. Sharpening Stone
F. Cotton Pliers
G. Explorer

MICROBES AND DISEASES
UNIT XII

UNIT OBJECTIVE

After completing this unit, the student will be able to identify basic laboratory equipment, distinguish between classes of microorganisms and identify diseases caused by the different classes of microorganisms. The student will also be able to differentiate between infectious disease types and name the components of blood. This knowledge will be evidenced by satisfactory completion of a unit test.

SPECIFIC OBJECTIVES

After completing this unit, the student will be able to:

1. Identify the essential parts of a microscope.
2. Recognize good and bad techniques in caring for a microscope.
3. Identify common laboratory glassware.
4. Describe types of balances.
5. Match information on the use of calibrated and volumetric glassware.
6. Differentiate weight/volume and volume/volume percent solutions.
7. Name vital functions of living organisms.
8. Select from a list of factors influencing growth of microorganisms.
9. Match classes of microorganisms to their correct definitions.
10. Select from a list, diseases caused by protozoa, fungi, rickettsiae and viruses.
11. Distinguish between classes of bacteria.
12. Sketch pictures of microorganisms from prepared cultures.
13. Name the common parasitic helminths or worms which may infest the human organism.
14. List the methods of entry of bacteria in the human body.

15. Name three causes of disease.

16. List four ways to maintain asepsis.

17. Differentiate between the infectious disease types.

18. List four factors which determine the presence of an infection.

19. Recognize two methods of laboratory diagnosis of infectious diseases and three methods of destroying microorganisms in the external environment.

20. Identify nonspecific resistance defense reactions.

21. List the signs and symptoms of inflammation.

22. Define active and passive immunity.

23. Distinguish the functions of blood.

24. List the four components of blood.

25. Distinguish the four blood types.

26. Describe the procedures for collecting blood.

27. Determine whether statements about urine are true or false.

28. Identify terms

MICROBES AND DISEASES
UNIT XII

SUGGESTED ACTIVITIES

I. Suggested activities for the instructor:

   A. Provide students with objective sheet.

   B. Discuss unit and specific objectives.

   C. Provide students with information sheet.

   D. Discuss information sheet.

   E. Provide information for students to use in completing assignment sheets.

   F. In small groups, have students prepare charts illustrating positive and negative aspects of bacteria, molds, fungi, etc. Lead a class discussion on the completed charts.

   G. Invite a medical technologist, medical laboratory technician, or certified laboratory technician to speak to the class about employment opportunities, training required, and types of work performed.

   H. Conduct a laboratory experiment in growing microbes.

      - Collect one or more of the following samples:

        -Sneeze sputum on a paper plate.
        -Raisins in water on a shelf.
        -Fruit in a small amount of syrup in a dark place.
        -Moistened bread in a dark place.

      - Check each sample daily and note findings; prepare and examine slides under the microscope.

      - CAUTION: If using culture media such as beef broth, be sure to seal culture plates and dispose directly into school incinerator.

      - Complete a "germ" chart, tabling characteristics and conditions which favor or relate to the growth of specific types of microbes.

I. Have students examine various objects (such as a drop of water, a strand of hair, etc.) to become familiar with the use of the microscope.

J. Have students prepare a written or oral report on a career area dealing with microorganisms.

K. Arrange a field trip to a medical or research laboratory to observe the kinds of workers employed, work being performed, and special equipment being used.

L. Have students interview public health officials and prepare reports on the types of inspections required in community facilities (such as restaurants, hospitals, and nursing homes) to prevent the spread of disease.

M. Assign a group of students to assemble a bulletin board displaying the complex structure of the Public Health Department.

N. Visit a medical laboratory to observe how microbes are prepared for study, examined, and stored.

O. Have students review newspapers, current magazines, etc. for information relating to microbiology and the prevention of infectious disease.

P. Show films and/or filmstrips concerning microbes. Classify types of microbes on the chalkboard and discuss the influence of each on health and disease.

Q. Discuss immunity, defining types of immunity and providing examples of situations in which each might occur.

R. Have students chart communicable diseases for which immunity may be obtained, indicating those diseases for which they themselves have immunity. Discuss the need to keep immunizations up-to-date.

S. Visit an immunization clinic and discuss observations in class.

T. After reviewing current information on the value and importance of immunization, lead a class debate on "Which is better-immunization or the use of antibiotics?"

U. Have public health nurse speak on prevention of communicable disease.

V. Role-Play Situation: Explain to mother of infant the importance of immunization against communicable diseases.

W. Visit a well baby clinic and observe immunization of infants.

X. Assist school nurse in checking records of students for adequate immunizations.

Y. Have students divide into groups and discuss ways they might prevent infection as:

a member of the hospital team
a member of the community
a school employee
a family member

II. Instructional Materials

A. Objective sheet.

B. Information sheets.

C. Transparency masters

1. XII-TM-1
   Glassware

2. XII-TM-2
   Triple Beam Balance

3. XII-TM-3
   Compound Microscope

4. XII-TM-4
   Protozoa

5. XII-TM-5
   Fungi

6. XII-TM-6
   Bacteria

7. XII-TM-7
   Rickettsiae and Viruses

8. XII-TM-8
   Metazoa

9. XII-TM-9
   Protozoan Infections

D. Assignment sheets.

1. Assignment Sheet #1
   Identification of Glassware

2. Assignment Sheet #2
   Sketch Pictures of Microorganisms From Prepared Cultures

3. Assignment Sheet #3
   Blood Transfusions

E. Answers to assignment sheets.

F. Test

G. Answers to test.

III. Unit References

A. Brooks, Stewart M., Integrated Basic Science, Fourth Edition. St. Louis, Missouri: The C.V. Mosby Company, 1979.

B. Wittman, Karl S., and Thomas, John C., Medical Laboratory Skills. New York: Gregg Division/McGraw-Hill Book Company, 1977.

C. Curriculum Guide for Health Occupations Education. Illinois Office of Education, Department of Adult, Vocational and Technical Education.

D. Minnesota Secondary Health Occupations Curriculum Guidelines, Division of Vocational-Technical Education, Minnesota Department of Education.

E. Health Occupations Education Units of Instruction Volume II, Occupational Curriculum Laboratory, East Texas State University, Commerce, Texas, 1979.

F. Oklahoma State Board of Vocational and Technical Education, Health Service Careers. Oklahoma: Curriculum and Instructional Materials Center, 1979.

G. Orientation to Health Occupations, Industrial Materials Laboratory, University of Missouri - Columbia.

H. Edwards, Gabrielle I. and Cimmino, Marion: Laboratory Techniques for High Schools. Woodbury, New York: Barron's Educational Series, Inc., 1974. (Available from Barron's Educational Series, Inc., 113 Crossways Park Drive, Woodbury, New York 11797.)

IV. Additional Resources:

A. Audiovisuals:

1. "The Microscope", Parts I and II. Eye Gate, 146-01 Archer Avenue, Jamaica, New York 11435

2. "Infection Control Series." Available from Concept Media, P.O. Box 19542, Irvine, CA 92714.

3. Department of Education, Audio-Visual Service, Little Rock, AR

   a. "White Blood Cells"
   b. "The Work of the Blood"
   c. "Viruses - Threshold of Life"
   d. "Protozoa - One-celled Animals"

4. Arkansas Department of Health, 4815 West Markham, Little Rock, AR 72201

   a. "Pasteur's Legacy"
   b. "Microorganisms: Beneficial Activities"
   c. "Microorganisms: Harmful Activities"
   d. "How Disease Travels"
   e. "Epidemiology of Staphylococcal Infection"
   f. "Defense Against Invasion"
   g. "The Elusive Enemy"

B. Printed Materials:

1. Diggs, L.W., M.D.; Sturm, Dorothy and Bell, Ann. The Morphology of Human Blood Cells. North Chicago, Illinois: Abbott Laboratories, 1970. (Available from Abbott Laboratories, North Chicago, Illinois 60064.)

2. Driessen, Gerri. Body Structure and Function, "The Circulatory System." Available from Anoka AVTI, Anoka, Minnesota.

MICROBES AND DISEASES
UNIT XII

INFORMATION SHEET

I. The Microscope

- A. Kinds of microscopes
  1. Simple -- Single lens or magnifying glass, magnifies up to 200X.
  2. Compound -- Series of lenses to increase magnification, magnifies up to 1000X.
     - a. Monocular -- single eyepiece (ocular)
     - b. Binocular -- two eyepieces (oculars)
  3. Dark field -- light reflected from the specimen produces a light object on a dark background.
  4. Election -- gives greatest magnification, up to 250,000X.
- B. Parts of compound microscope
  1. Eyepiece (ocular) -- contains magnifying lens.
  2. Body tube (barrel) -- connects eyepiece to objectives.
  3. Nosepiece -- supports objectives.
  4. Arm -- support by which microscope is carried.
  5. Stage -- part of microscope where the slide is placed.
  6. Diaphragm -- makes possible adjustment of amount of light entering objectives.
  7. Slide clips -- hold glass slide in place.
  8. Mirror -- reflects light rays into objective.
  9. Base -- supports body of microscope.
  10. Fine adjustment - wheel that moves either stage or objective minimally for fine focusing.

11. Coarse adjustment -- wheel that moves either stage or objective maximally for first sighting of object.

12. Objectives -- contain lenses for magnification.

13. Substage control -- moves stage for focusing (not found on all microscopes).

14. Oil immersion objective -- special objective on some microscopes. It is designed to be used with a drop of immersion oil between the object and the surface of the lens, useful in study of bacteria.

C. Care of the microscope

1. Cleaning

   a. Always use lens paper to clean the ocular, objectives, and condenser of the microscope because these are hand-ground optical lenses. Even facial tissues, because they are made of wood fibers, may scratch the glass lenses.

   b. Xylol placed on lens paper may be used to clean especially dirty lenses, but use sparingly as xylol can damage the lens mounting.

   c. Xylol may be used to remove oil from the oil immersion lens. The lens is then dried with clean lens paper.

   d. The stage may be cleaned with xylol, followed by dry lens paper.

2. Transporting microscope

   Always use both hands. Carry the microscope with one hand on the arm and the other under the base. Never try to carry other objects, (books, notebooks) while carrying the microscope.

3. Storage of microscope

   Store microscope in designated safe place, in case, or enclosed shelves. Always cover the microscope when not in use to keep dust and dirt from lenses.

INFORMATION SHEET

4. If your microscope does not function properly in any way, do not try to force it nor fix it, but notify your instructor at once. A microscope is an expensive piece of precision equipment.

II. Identification of laboratory glassware

A. Glassware -- Standard glassware is essential equipment in all laboratories. It is durable (if treated properly), easily cleaned, does not affect a chemical reaction, and does not readily stain. Most laboratory glassware is borosilicate glass (Pyrex) and will withstand extremes of temperature.

B. Types of glassware

a. Flasks

1. Erlenmeyer

2. Round bottom

3. Volumetric

b. Beakers

c. Funnels

d. Test tubes

e. Graduated cylinders

f. Reagent bottles

g. Pipettes

III. Types of balances

A. Triple beam balance

A triple beam balance has three marked beams. The beam closest to the student is numbered 1 through 10. Each number represents 1 gram. Each gram is divided into 10 parts, thus each division represents one/tenth of a gram.

This balance will weigh objects as small as one-tenth of a gram. Beams two and three are used for weighing larger quantities.

INFORMATION SHEET

B. Double pan balance

To use the double pan balance, weights are added to the right pan. The object to be weighed is placed in the left pan. The needle swings in the center of the balance, and rests at zero when accurate balance has been achieved.

C. Analytical balance

The analytical balance is a sensitive and precise instrument which weighs with a precision of 0.1 mg. (.0001 gm).

IV. Measuring with calibrated and volumetric glassware

A. Graduated cylinders are designed to measure various quantities of liquid in graduated increments. A calibration is a mark on a laboratory tool that indicates amounts it will measure. For example, a 100 ml. cylinder graduated in 1 ml. increments may be used to measure any quantity from 1 ml. through 100 ml. (In actual practice, a cylinder of about the amount to be measured should be used for accurate measurement). In using the 100 ml. cylinder, note the two sets of numbers. Begin reading the scale at the bottom of the cylinder. One set of numbers begins at 100 and goes upward to zero. The other set starts at zero and rises to 100. Thus, if 85 ml. of liquid is poured into the cylinder, you would read the 85 ml. on the side beginning at zero. Readings of volume of liquids must always be made at the bottom of the meniscus. (A meniscus is the crescent-shaped curvature a liquid assumes when it is placed in a slender container. To read a volume of liquid in calibrated or volumetric glassware, the bottom of the meniscus is read against the graduation or calibration mark.)

B. Volumetric flasks are designed to contain a single given quantity. They are available in sizes from 1 ml. to 2,000 ml. and have one calibration on the neck of the container. They usually have a ground glass stopper and are used primarily in the preparation of specific volumes of reagents. In using volumetric flasks, always read the bottom of the meniscus against the calibration mark.

C. Pipettes are calibrated glass tubes open at both ends. They are used to measure small volumes of liquid with accuracy.

INFORMATION SHEET

1. Types of pipettes

    a. Volumetric (transfer) -- calibrated to measure a single, fixed volume (e.g., 1 ml.)

    b. Graduated -- calibrated to measure various quantities within a given amount. (e.g., 10 ml. graduated in 1 ml.)

2. Safety precautions for use of pipettes

    a. Never use cracked, chipped, or broken pipettes. You may cut lips or fingers. Also, it is impossible to make accurate measurements with broken equipment.

    b. Never pipette contaminated or poisonous material. Such material is hazardous if introduced into the mouth.

    c. Do not put pipettes which have touched any other material back into reagent bottles, thereby contaminating the entire contents of the bottle.

V. Types of percent solutions

A. Weight/volume solutions -- The solution contains a weight of solute in a volume of solvent. Usually the solute is solid, but may be liquid or gas.

B. Volume/volume solutions--The solution contains a volume of solute in a volume of solution. The solute and the solvent are liquid.

(NOTE: The solute is the substance dissolved in a solution. The solvent is the liquid in which a solute is dissolved.)

VI. Vital functions of living organisms

A. Metabolism

B. Growth

C. Reproduction

D. Irritability

E. Motion

F. Protection

INFORMATION SHEET

VII. Factors influencing growth of microorganisms

   A. Light

   B. Temperature

   C. Humidity

   D. Food

   E. Oxygen supply

VIII. Microorganism classification

   A. Scientific classification

      1. Plant

      2. Animal

      3. Protista

   B. Major classes

      1. Protozoa - Single cell animals capable of movement by various means.

      2. Fungi - Low forms of plant life lacking chlorophyll.

      3. Rickettsiae - Organisms smaller than bacteria but larger than viruses growing only within the cells of a living host.

      4. Viruses - Organisms unable to grow or reproduce until they have taken over a living cell.

      5. Bacteria - Single-cell organisms considered to be colorless plants

      6. Metazoa (Helminths) - Multicellular animals whose cells become differentiated to form tissues.

IX. Protozoa

   A. Characteristics

      1. Single-celled organisms

      2. Obtain food as a complete organism

INFORMATION SHEET

3. Cause few human diseases

4. Diseases transmitted to humans

B. Diseases caused by protozoa

(NOTE: Diseases caused by protozoa are sometimes transmitted by insects.)

1. Amebic dysentery

(NOTE: Amebic dysentery is caused by **entameba histolitica.**)

2. Malaria

(NOTE: Malaria is caused by several species of plasmodia.)

3. Trichomonas infection

(NOTE: Trichomonas may cause vaginitis.)

X. Fungi

A. Characteristics

1. Belong to plant kingdom; lack chlorophyll.

2. Feed on living organisms or decaying organic matter.

B. Types of fungi and diseases caused by them

1. Molds - Multicellular plants that grow rapidly in favorable conditions.

a. Ringworm

(NOTE: Ringworm is also known as tinea capitis.)

b. Athlete's foot

(NOTE: Athlete's foot is also known as tinea pedis.)

2. Yeasts - Unicellular plants which reproduce by budding.

a. Thrush

b. Vaginitis

(NOTE: Thrush and vaginitis are also known as monilia or candida infections.)

INFORMATION SHEET

XI. Rickettsiae

A. Characteristics

1. Organisms smaller than bacteria but larger than viruses growing only within the cells of a living host.

2. Cannot survive long outside the body.

3. Disease organisms - generally spread by a carrier.

B. Diseases carried by rickettsiae

1. Rocky Mountain spotted fever

(NOTE: Rocky Mountain spotted fever is also known as Rickettsia rickettsii.)

2. Typhus

(NOTE: Typhus is also known as Rickettsia prowazekii or typhi.)

3. Q fever

(NOTE: Q fever is also known as Coxiella burnetti.)

XII. Viruses

A. Characteristics

1. Active only in cells of living organisms.

2. Result in common diseases.

3. Cannot survive long outside the body.

B. Diseases caused by viruses

1. Smallpox (variola)

2. Chickenpox (varicella)

3. Measles (rubeola)

4. German measles (rubella)

INFORMATION SHEET

5. Influenza

6. Infantile paralysis (poliomyelitis)

7. Mumps (epidemic parotitis)

8. Common cold (coryza)

9. Fever blisters (herpes simplex)

10. Shingles (herpes zoster)

11. Rabies

XIII. Classes of bacteria

A. Nonpathogenic

1. Essential for life.

2. Assist in decomposition of organic matter.

3. Acid in production of some foods and chemicals, such as cheeses, sauerkraut, cultured milk products, and lactic acid.

B. Pathogenic - Cause many diseases such as syphilis, gonorrhea, tuberculosis, typhoid and paratyphoid fevers, and whooping cough.

XIV. Common parasitic helminths or worms which may infest the human organism.

A. Roundworm

B. Pinworm

C. Hookworm

D. Trichinella

E. Flatworm

INFORMATION SHEET

XV. Transmission of Microorganisms

  A. Personal contact

  B. Particles in the air

  C. Food and liquids

  D. Insects

XVI. Bacteria in the Human Body

  A. Methods of entry

    1. Mouth

    2. Cuts in the skin

    3. Mucus membranes

    4. Breathing

  B. Harmless microorganisms contained in the body.

XVII. Causes of disease

  A. Heredity

  B. Unknown

  C. Microorganisms

XVIII. Maintain asepsis by

  A. Handwashing

  B. Sterilization

    1. gas

    2. steam

  C. Disinfection

    1. boiling

    2. germicides

  D. Control of pests

829

INFORMATION SHEET

XIX. Infectious diseases

A. Types

1. Local - one which is confined to one spot or area of the body.

2. Focal - a persistent bacterial infection of some organ or region which causes symptoms elsewhere in the body.

3. Generalized - one which involves the whole body.

4. Acute - one which runs a rapid, severe, short course.

5. Chronic - one which runs a slow course covering a period of weeks, months or years.

6. Primary - an original infection from which a second one originates (the first infection in time or order.)

7. Secondary - an infection produced by a primary cause.

B. Pathogen effects on body

1. Mechanical injury

2. Body cell and tissue destruction

3. Toxin-caused injury

C. Infectious disease course

D. Factors which determine the presence of infection

1. Entry portals

2. Organism numbers

3. Virulence

4. Host resistance

E. Laboratory diagnosis

1. Smear

2. Culture

INFORMATION SHEET

XX. Infectious disease control

- A. Transmission
  - 1. Organism reservoirs
  - 2. Control factors
  - 3. Microorganism control in the outside environment
    - a. Destruction
      - 1. Chemicals
      - 2. Heat
      - 3. Radiation
    - b. Removal
  - 4. Microorganism control within body
    - a. Prevention
    - b. Therapy

XXI. Immunology

- A. Nonspecific resistance
  - 1. Species resistance
  - 2. Racial or group resistance
  - 3. Individual resistance
  - 4. Mechanical and chemical barriers to resistance
  - 5. Phagocytosis
  - 6. Inflammatory response
- B. The five classical signs and symptoms of an acute inflammation
  - 1. Redness
  - 2. Heat
  - 3. Pain
  - 4. Swelling
  - 5. Loss of function

INFORMATION SHEET

- C. Specific resistance
  - 1. Types of specific immunity
    - a. Active immunity - Immunity produced by the body when an antigen is introduced into the body.
    - b. Passive immunity - Immunity produced when antibodies produced by another person are injected into the body.
  - 2. Active immunity production
  - 3. Passive immunity production

XXII. Basic immunizations

- A. Child protection
- B. Adult protection

XXIII. Blood

- A. Functions
  - 1. Nutritive (provides tissue cells with food substance.)
  - 2. Excretory (provides for elimination of cell wastes.)
  - 3. Protection (provides for defense and resistance to disease.)
  - 4. Regulatory (provides internal balance of heat and fluids.)
  - 5. Respiratory (provides cells with O_2 (oxygen) and elimination of CO_2 (carbon dioxide.)
- B. Composition
  - 1. Red cells, white cells and platelets comprise about 45% of the blood; the remaining liquid portion is the plasma, about nine-tenths of which is water.
  - 2. Red cells (erythrocytes)
    - a. Are made in the red bone marrow
    - b. Contain hemoglobin (gives red cells their ability to pick up O_2 in the lungs.)
    - c. The key raw material required by the red cell factories is iron.

INFORMATION SHEET

- d. Can live from 100 to 120 days within the body.
- e. Old or dead red cells are removed from the blood by the spleen.
- f. The average man has 30 trillion red cells in his blood, about 2.5 trillion per pint; women have slightly less, about 27.5 trillion.
- g. During periods of strenuous muscular exercise or emotional stress the number of circulating red cells increases. Also, at high altitudes or high temperatures they are more numerous.

3. White cells (leukocytes)

   - a. Are made in the bone marrow and in the lymphoid tissues of the body.
   - b. Approximately one white cell to every 600 red cells.
   - c. Are important agents by which the body defends itself against disease.
   - d. Three basic groups, classified according to their histological development.
     1. The granulocytic series
     2. the lymphocytic series
     3. the monocytic series

4. Platelets (thrombocytes)

   - a. Small cell fragments that do not contain a nucleus.
   - b. Develop from very large cells referred to as megakaryocytes, located in bone marrow.
   - c. Are about 1.5 trillion platelets in the normal blood stream, and after a short life of only 10 days they are removed from the blood, mainly in the spleen and liver.
   - d. Assist in blood coagulation since they help form the blood clots that in turn stop bleeding by plugging openings in blood vessels.

INFORMATION SHEET

5. Plasma

   a. Composed of water (about 92 percent), proteins (about 7%) and very small amounts of fats, sugar, and mineral salts.

   b. Contains three protein groups

      1. Albumin - involved with maintaining the homeostasis of fluid balance and osmotic pressure of the blood.

      2. Globulins - the protein antibodies responsible for immunity.

      3. Fibrinogen - a protein involved in blood clotting.

6. Blood Typing

   a. First discovered by Dr. Landsteiner in 1900.

   b. Determined by antigens on red blood cells (located in the blood plasma which also has proteins).

   c. Blood types are named for the antigens in the red blood cells:

Blood Type	Antigen Present on Red Cells
A	A
B	B
AB	AB
O	(no antigens)

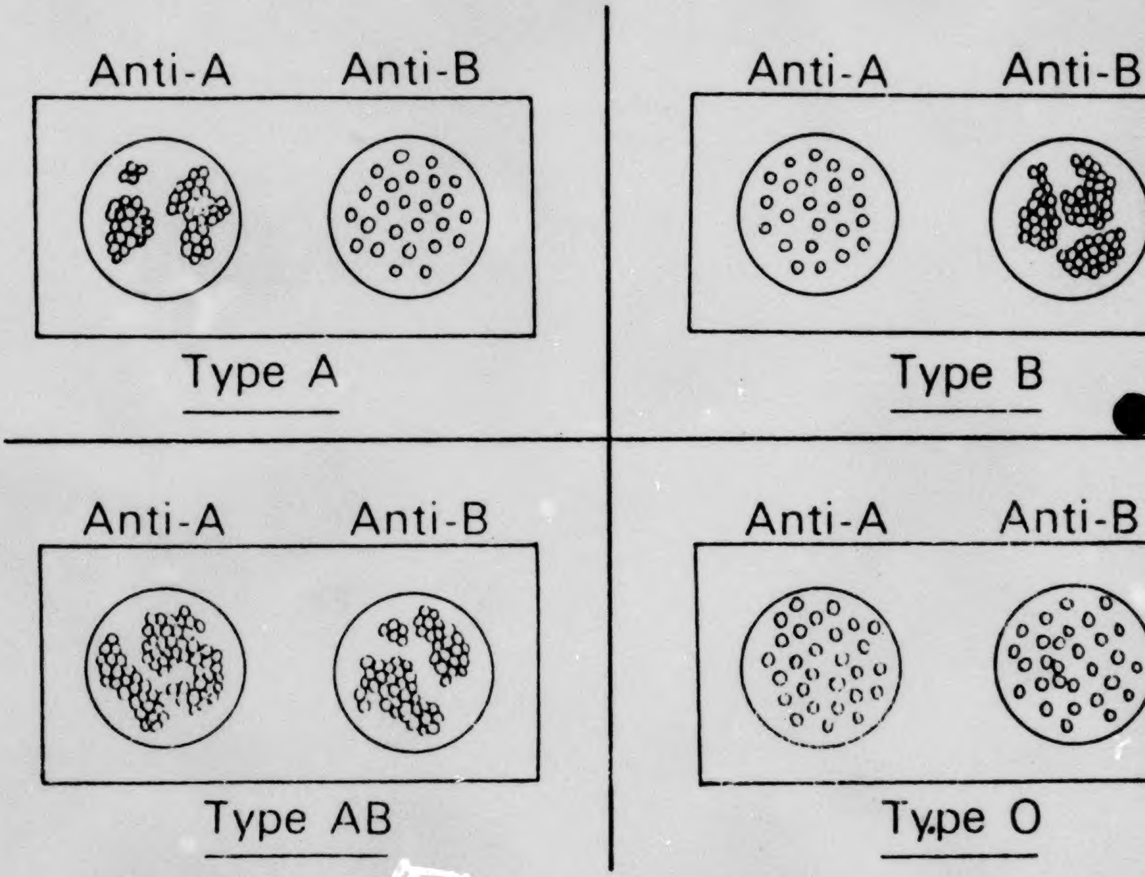
   d. For each blood type there are also specific antibodies present in the blood plasma:

Blood Type	Antibody in Plasma
A	anti-B
B	anti-A
AB	(no antibodies)
O	anti-A and anti-B

INFORMATION SHEET

e. Done by using a solution (called typing serum) made from human plasma which is specific for each type. This blood typing serum contains antibodies that are specific for each individual antigen.

TYPING BLOOD


Anti-A
Anti-B
Type A
Anti-A
Anti-B
Type B
Anti-A
Anti-B
Type AB
Anti-A
Anti-B
Type O

When the antigens on the red cells come in contact with the same antibodies in the typing serum, the red cells will "agglutinate" (clump).

If a person has type A blood, the blood will agglutinate with anti-A typing serum.

If a person has type B blood, the blood will agglutinat with anti-B typing serum.

INFORMATION SHEET

If a person has type AB blood, the blood will agglutinate with both anti-A and anti-B typing serum.

If a person has type O blood, it will not agglutinate with anti-A or anti-B typing serum.

7. Blood Transfusions

Blood groups can be matched for transfusions by their antigens and antibodies. In a successful transfusion no agglutination occurs. A person can always receive blood safely from the same blood type because the antigens and antibodies are the same. Clumping of the blood can occur when the A antigen reacts with the anti-A antibody or the B antigen reacts with the anti-B antibody.

Normally, blood is transfused which is "type specific," e.g. A to A or B to B. However, in extreme emergencies "type compatible" blood can be given, e.g. A to AB, or O to A, B, or AB.

Formerly, people having O blood were called "universal donors." That meant they could give blood to other blood groups. (The largest percentage of the population has type O blood.) People having AB blood were called "universal recipients." That meant they could receive blood from any blood group. (Type AB blood is the rarest type of blood.)

After blood types are determined, blood crossmatching is performed in the laboratory. This is done by mixing the donor's blood with the patient's blood at different temperatures and under different conditions. This is performed by a trained medical technologist, and requires exacting knowledge and expertise.

8. The Rh Factor

Through experimentation with the blood of the Rhesus Monkey, another important blood factor was discovered called the Rh factor. The Rh factor is an antigen located on the red blood cells. This factor is found in about 85% of the population. People with this factor are Rh positive and are indicated as Rh+. About 15% of the population do not have this factor and are Rh negative. This is indicated by Rh-. (ABO blood groups and the Rh factor are inherited.)

INFORMATION SHEET

It is important to know the Rh blood type, especially in the case of pregnancy. If a pregnant woman has Rh negative blood and the father has Rh positive blood, the fetus could be Rh positive. This could have serious effects on the development of the fetus. The mother's blood produces antibodies that may get into the blood of the fetus. These antibodies can destroy the red blood cells of the baby. This is called erythroblastosis fatalis, or hemolytic disease of the newborn. It usually occurs with the second or third pregnancy.

Recent developments make it possible to better treat Rh problems. One way is to replace the baby's blood after birth. A shot for the Rh- mother has also been developed to be given after the birth of an Rh+ child. This must be given to a mother who has never built anti-Rh antibodies previously.

XXIV. Collection of Blood

A. Blood tests are among the most common laboratory procedures. Blood specimens are used for chemical, serological, hematologic, microbiological, and pre-transfusion tests.

B. Blood specimens may be whole clotted blood from which the serum is used, whole blood (to which an anticoagulant has been added) from which plasma is used, whole blood used in its entirety, or blood film placed on microscopic slide.

C. Methods of collecting blood

1. Venipuncture-- method of choice for collection of several ml. of blood. Be sure you have all needed equipment as needle, syringe (vacutainer), alcohol sponge, tourniquet, and container for collected blood.

a. Identify patient, using I.D.

b. Greet patient and explain procedure.

c. Bare arm above elbow.

d. Apply tourniquet above elbow.

(Avoid discomfort to patient) Ask patient to clench fist, causing veins to distend.

e. Inspect patient's veins and select suitable site for puncture.

INFORMATION SHEET

f. Cleanse puncture site with alcohol sponge.

g. Insert needle into vein, bevel side up.

h. If using syringe, pull plunger back gently until required amount of blood is collected. (NEVER push plunger to force blood and/or air back into vein).

i. Release tourniquet; instruct patient to unclench fist.

j. Remove needle quickly.

k. Place fresh alcohol sponge over the wound.

l. Bend patient's elbow to apply pressure on wound.

m. Place blood in labeled containers.

n. Place adhesive bandage (e.g., Band-Aid) over wound.

o. Cleanse syringe and needle with cold water.

p. Observe patient at all times for signs of discomfort, fainting, or nausea.

q. Gather all materials used, thank patient for cooperation, and deliver blood to laboratory.

2. Capillary puncture

Capillary puncture is the method of choice when small quantities of blood are needed.

a. Greet patient and explain procedure.

b. Identify patient using I.D.

c. Be sure you have all necessary equipment.

d. Cleanse the puncture site with an alcohol sponge, and dry with second dry sponge.

e. Use sterile, disposable lancet.

f. Grasp finger (ear lobe) and with quick, firm movement, make a deep puncture.

g. Wipe away first drop of blood as it may contain foreign material.

INFORMATION SHEET

h. Collect blood as required for testing.

(Capillary tubes, slides, or diluting pipettes.)

i. Cleanse wound with alcohol sponge, and dry the site. Ask patient to hold the sponge over wound until bleeding stops.

j. Thank patient for cooperation; gather all materials, including used lancet and sponges.

XXV. Urine

A. A dilute, aqueous solution containing about 60 grams of solids in a 24-hour sample. Approximately one half of this amount is urea, the chief waste product, and the remainder is creatinine, electrolytes and an assortment of other organic and inorganic constituents.

B. The characteristic color of urine is attributable to urochrome, a pigment derived from bile.

C. Three processes are involved in the formation of urine:

1. Filtration
2. Reabsorption
3. Secretion

D. Clinical examination of urine is divided into three segments:

1. Its physical characteristics.
2. Its microscopic constituents.
3. Its chemical composition.

E. Analysis of physical characteristics of urine:

1. Volume excreted within a 24-hour period.
2. Color.
3. Odor.
4. pH reaction

INFORMATION SHEET

F. Microscopic examination of urine. (Performed after the urine is centrifuged. A solid portion called the sediment is produced.)

1. The following may be found in urine and are indicators of disease.

   a. epithelial cells

   b. red and white blood cells

   c. spermatozoa

   d. bacteria

   e. yeasts

   f. non cellular crystals

   g. coagulations of protein casts

G. Chemical composition of urine. (The chemical composition of urine is abnormal if excessive amounts of the following are detected.)

1. Proteins
2. Urea
3. Ammonia
4. Uric acid
5. Creatinine
6. Sugars
7. Hemoglobin pigments
8. Certain inorganic salts

XXVI. Terms and Definitions

Bacteriology - **Study of bacteria.**

Metazoa - Multicellular animal forms, e.g., roundworms, tapeworms.

INFORMATION SHEET

Protozoa - One-celled animals.

Microbiology - The scientific study of microorganisms.

Pathogen - Microorganism capable of causing a disease.

Parasite - Organism that lives within, upon, or at the expense of another living organism known as the host.

Saprophyte - Organism that lives upon the dead remains of plants and animals.

Anaerobe - Microorganism that can exist only in absence of oxygen.

Aerobe - Microorganism that can live and grow only in the presence of oxygen.

Asepsis - Keeping yourself, the patient and her/his surroundings as clean as possible.

Hematology - The study of the formed elements of the blood; focuses on the cellular elements of the blood.

Formed Elements - Cells of the blood which include red blood cells (erythrocytes), white blood cells (leukocytes), and platelets (thrombocytes).

Erythrocytes - Red blood cells.

Leukocytes - White blood cells.

Thrombocytes - Platelets.

"Universal donor" - People who have type O blood.

"Universal recipient" - People who have type AB blood.

Agglutinate - A reaction in which particles suspended in a liquid collect into clumps as a response to a specific antibody; to clump.

Urinalysis - The physical, chemical and microscopic examination of urine.

Carrier - A person not infected by, but transporting harmful bacteria.

Infection - The entrance of living agents into tissues, their subsequent growth and damage to tissues.

Vector - Anything animate or inanimate which carries microorganisms.

INFORMATION SHEET

Fomites - Inanimate objects contaminated by infected persons.

Communicable disease - A disease which can be naturally transmitted from one individual to another by direct or indirect contact.

Disinfection - A process that destroys pathogenic microorganisms or inanimate objects.

Sterilization - The process that removes all living microorganisms.

Antiseptic - An agent which prevents infections in living tissues.

Medical asepsis - Protection of patients and personnel from infection or reinfection.

Surgical asepsis - Sterilization, total absence of bacteria from an area.

Antibiotic - A substance lethal to bacteria; drugs used to destroy bacterial diseases.

Incubation period - Period between the entrance of the organisms to body and beginning of symptoms.

Portal of entry - Pathway by which a microorganism enters the body.

Contamination - The presence of material which is capable of causing an infection.

Epidemiology - Study of relationship of factors determining frequency and distribution of disease.

Immunology - Study of resistance to disease.

Non-specific resistance - Inborn power of body to defend itself against invasions of infectious organisms.

Specific resistance - Presence of antibodies in the body.

Antigen - A substance which stimulates the formation of antibodies when it enters the body.

Antibody - A substance produced in the body in response to antigen stimulation.

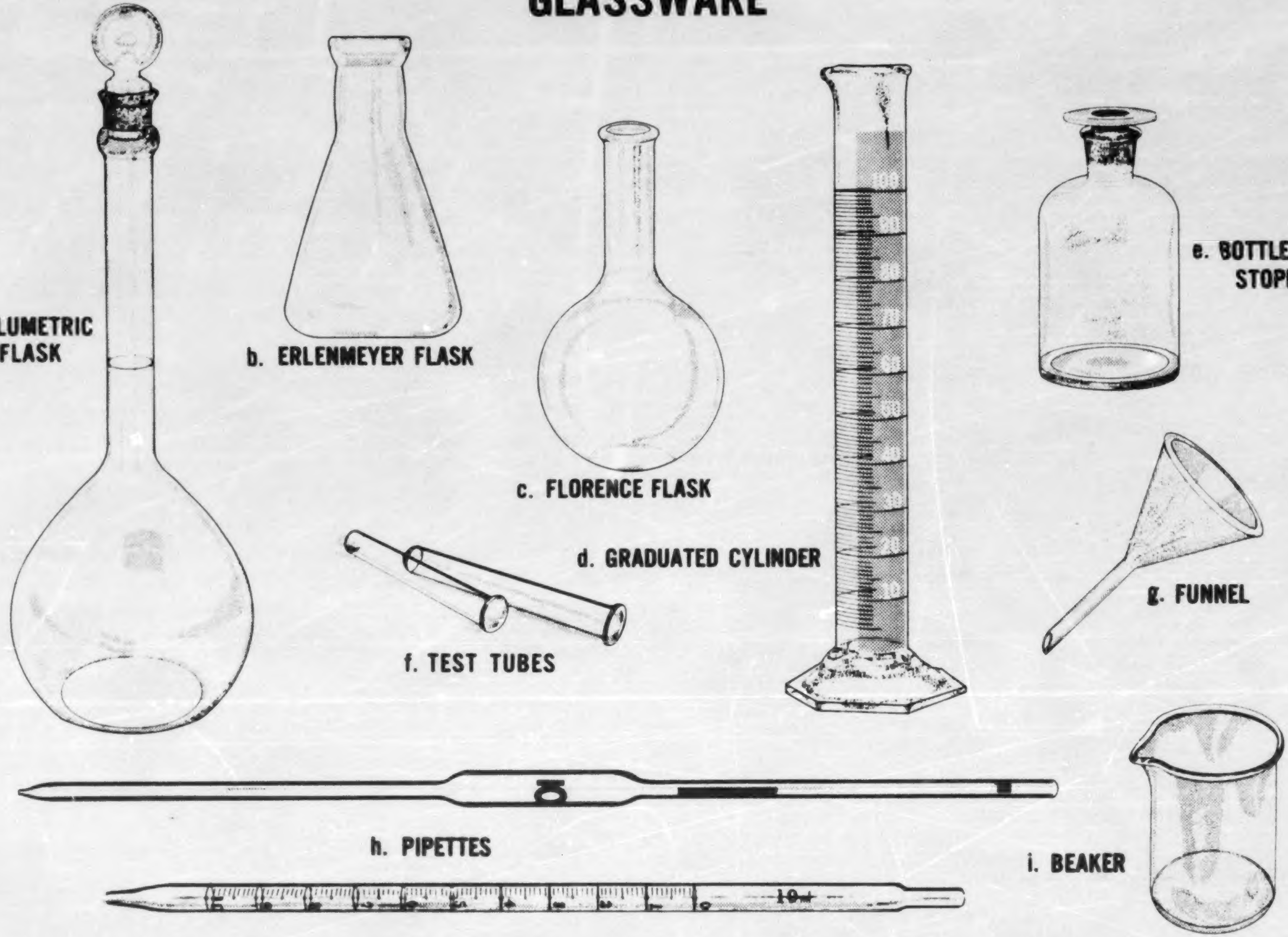
Active immunity - Immunity produced by the body when an antigen is introduced into the body.

INFORMATION SHEET

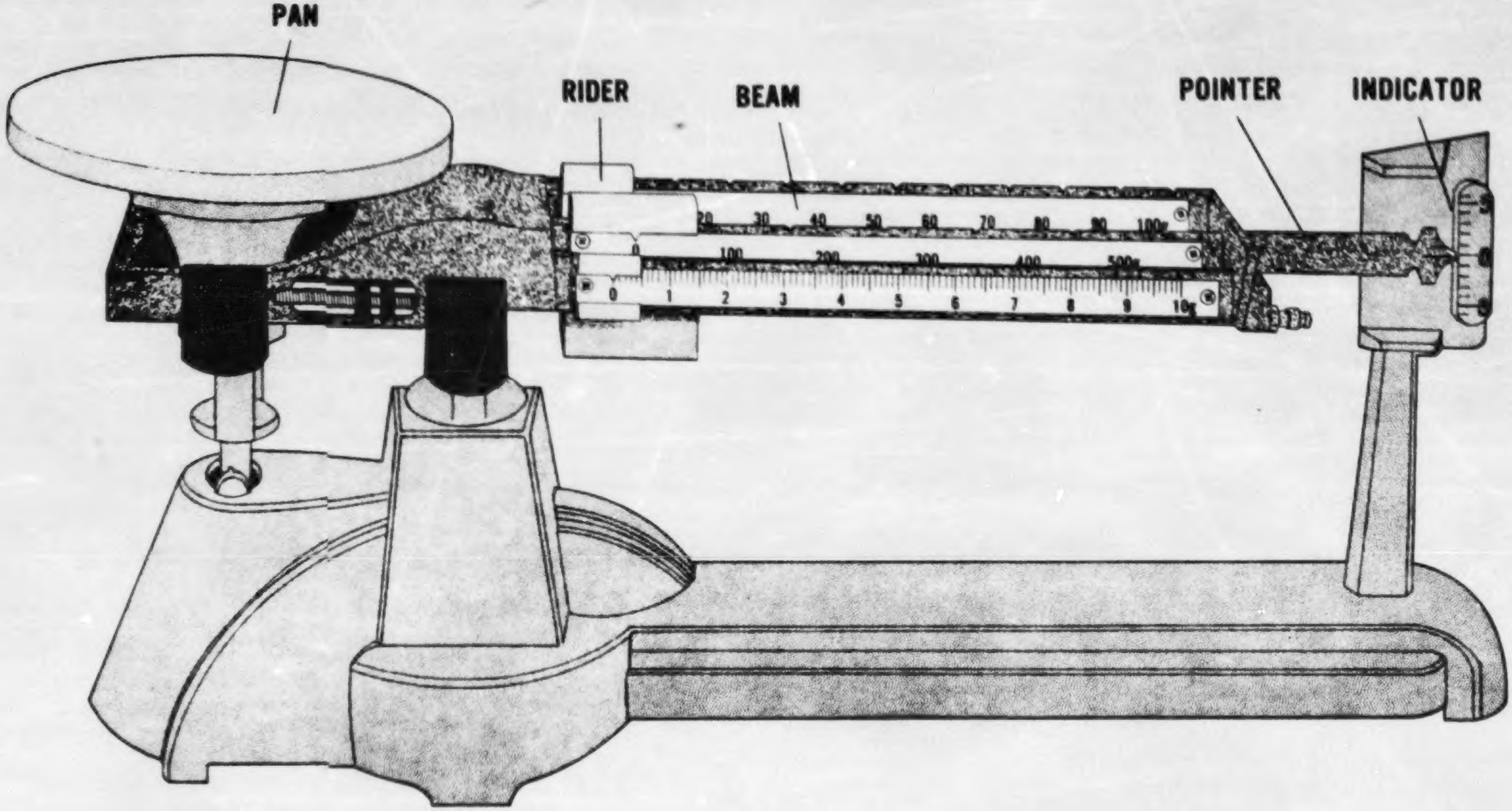
Passive immunity - Immunity produced when antibodies produced by another person or animal are injected into the body.

Vaccine - Substance developed from a killed or live, weakened bacteria, virus or rickettsia.

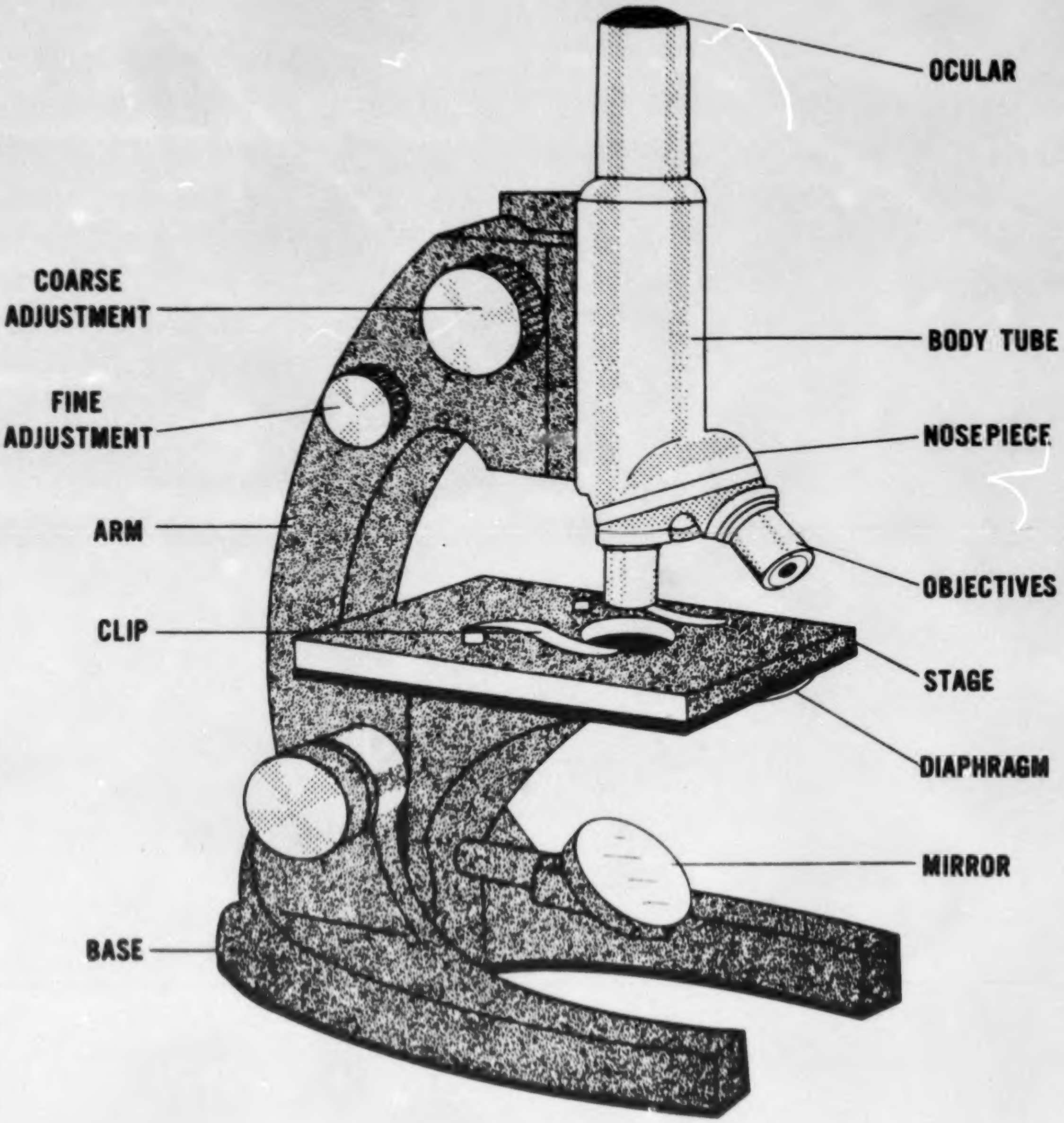
GLASSWARE


a. VOLUMETRIC FLASK
b. ERLENMEYER FLASK
c. FLORENCE FLASK
d. GRADUATED CYLINDER
e. BOTTLE AND STOPPER
f. TEST TUBES
g. FUNNEL
h. PIPETTES
i. BEAKER

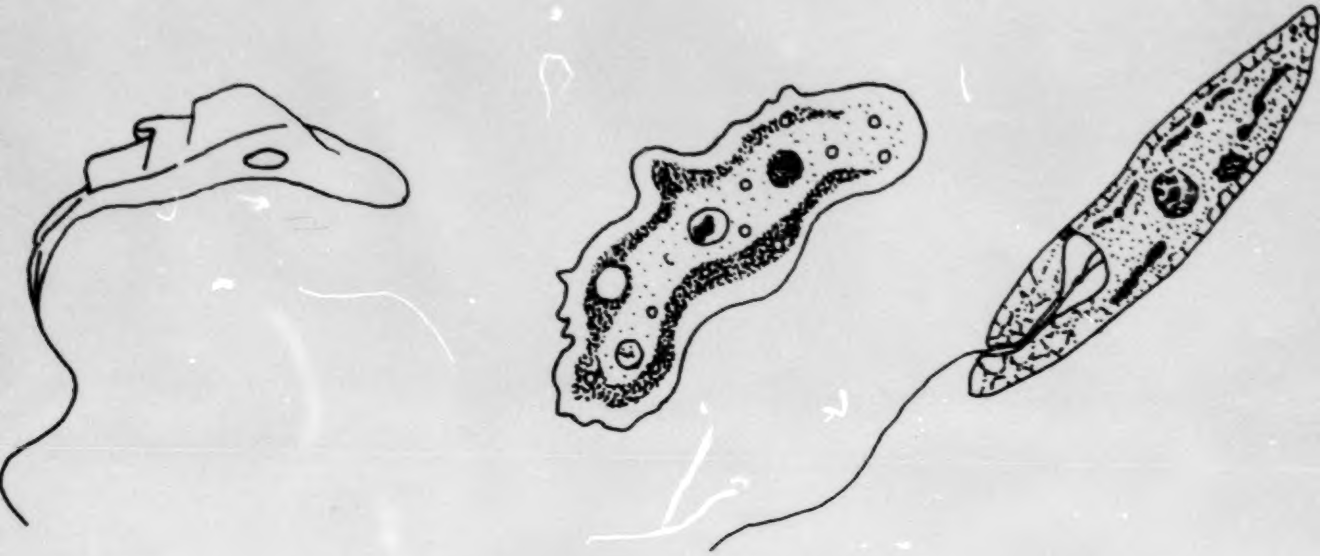
TRIPLE BEAM BALANCE


PAN
RIDER
BEAM
POINTER
INDICATOR
20 30 40 50 60 70 80 90 100g
0 100 200 300 400 500g
0 1 2 3 4 5 6 7 8 9 10g

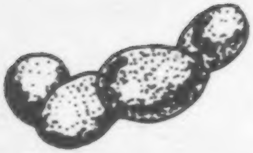
COMPOUND MICROSCOPE


OCULAR
COARSE ADJUSTMENT
BODY TUBE
FINE ADJUSTMENT
NOSEPIECE
ARM
OBJECTIVES
CLIP
STAGE
DIAPHRAGM
MIRROR
BASE

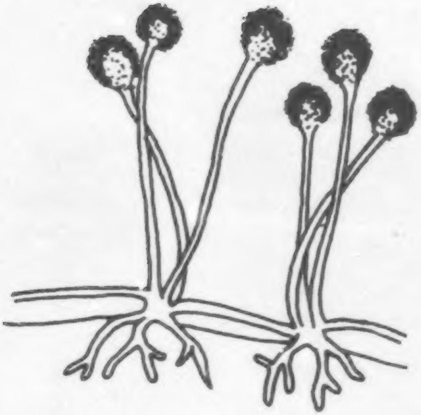
Protozoa



Fungi

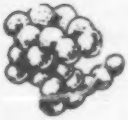


Yeast Cells

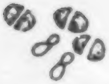


Molds

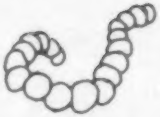
Bacteria



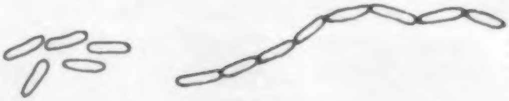
Staphylococci



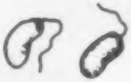
Diplococci



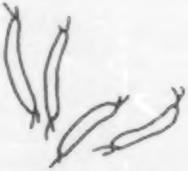
Streptococci



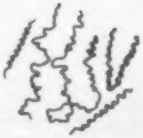
Bacilli (in Chains)



Vibrios



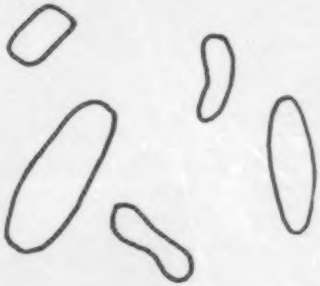
Spirilla



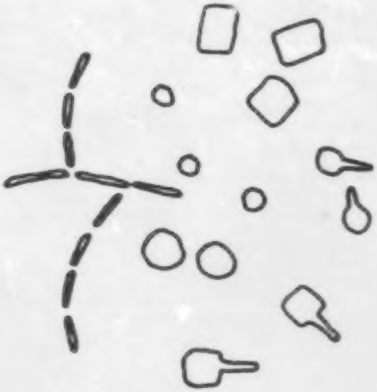
Spirochetes

Rickettsiae and Viruses

(As Seen Under an Electron Microscope)



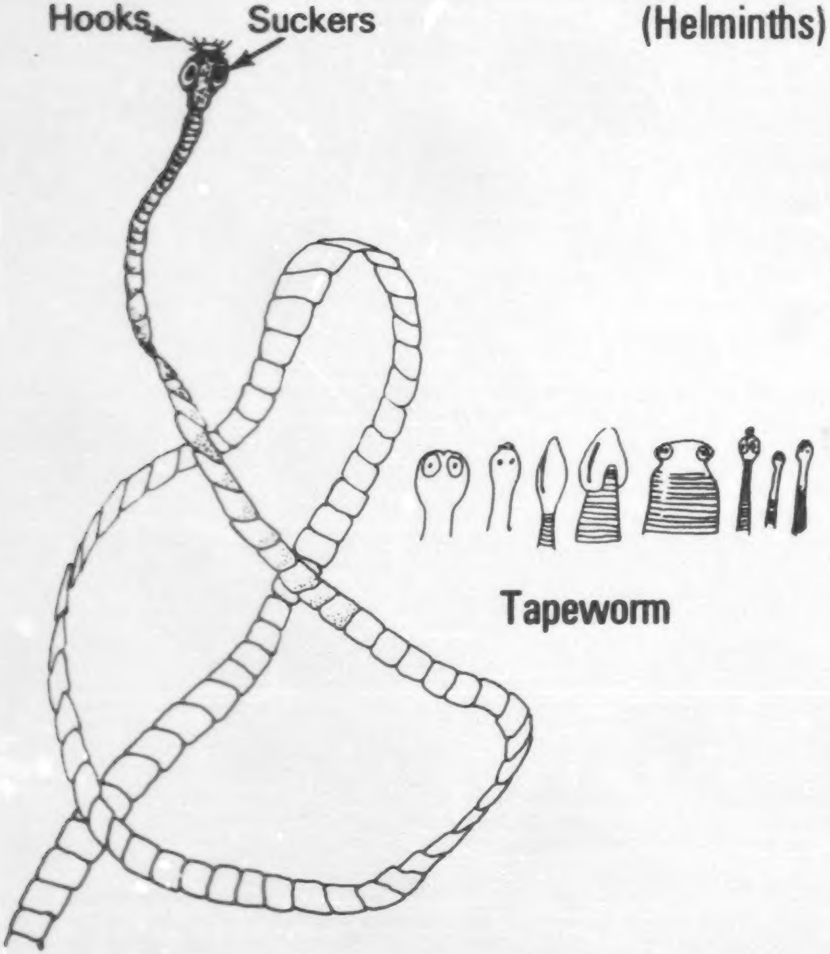
Rickettsiae



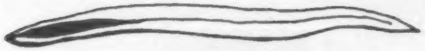
Viruses

Metazoa

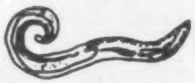
(Helminths)


Hooks
Suckers

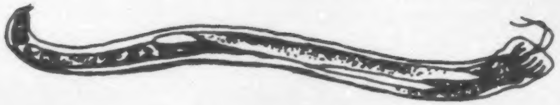
Tapeworm



Roundworm

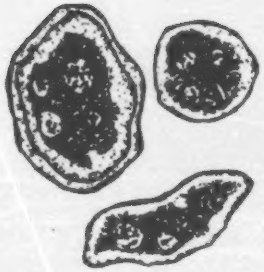


Pinworm



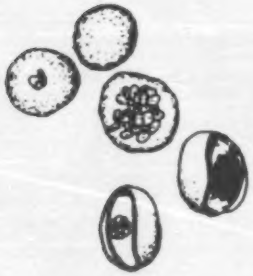
Hookworm

Protozoan Infections



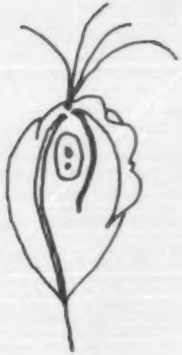
Amebic Dysentery

(Entamoeba Histolytica)



Malaria

(Plasmodium Vivax)

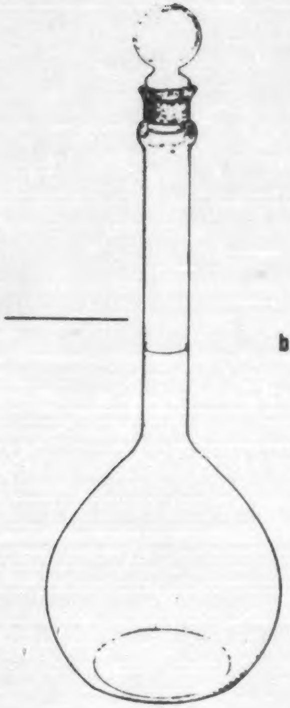


Trichomonas Vaginalis

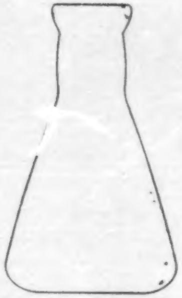
MICROBES AND DISEASES
UNIT XII

ASSIGNMENT SHEET #1--IDENTIFICATION OF GLASSWARE

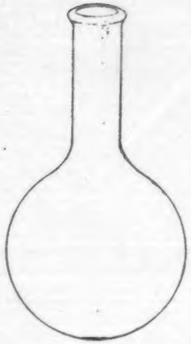
Directions: Label each item of glassware pictured.



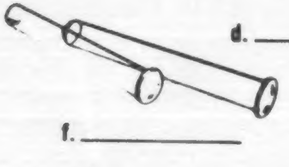
a. ____________



b. ____________

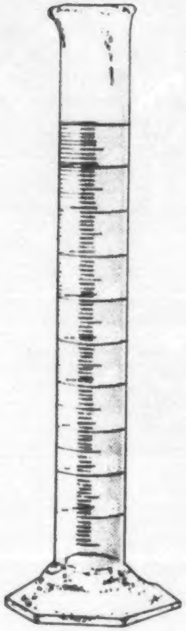


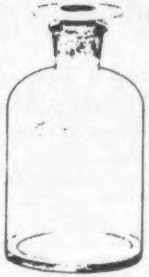
c. ____________



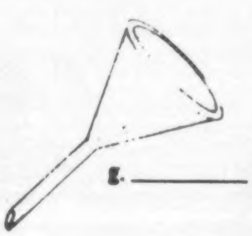
d. ____________

f. ____________

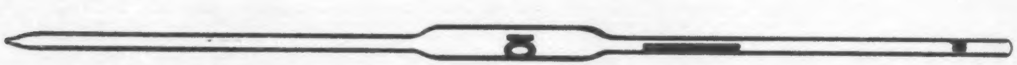




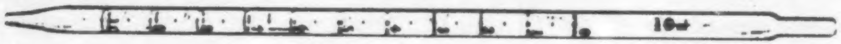
e. ____________

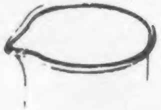


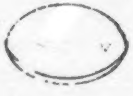
g. ____________



h. ____________







i. ____________

MICROBES AND DISEASES
UNIT XII

ASSIGNMENT SHEET #2--SKETCH PICTURES OF MICROORGANISMS FROM PREPARED CULTURES

Using agar plates or test tubes with appropriate medium, prepare a culture of microorganisms following instructions given by instructor.

1. Wash hands with soap and water
2. Place fingertips gently on medium or, using orange stick, clean beneath fingernail and place matter on medium
3. Identify plate as instructed

Growth will be incubated and returned to you.

Draw and describe below what kind of culture you see. If possible, borrow a microscope to view microorganisms.

Compare your observation with pictures of staphylococci, streptococci, diplococci, and others. Can you find any similarity?

MICROBES AND DISEASES
UNIT XII

ASSIGNMENT SHEET #3--BLOOD TRANSFUSIONS

Determine which blood types could be donated by blood types. Put a (+) if the donation is type compatible (acceptable) and a (-) if it is not compatible (not acceptable).

		RECIPIENT			
		A	B	AB	O
DONOR	A				
	B				
	AB				
	O				

(+) acceptable
(-) not acceptable

MICROBES AND DISEASES
UNIT XII

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

- a. Volumetric flask
- b. Erlenmeyer flask
- c. Florence flask
- d. Graduated cylinder
- e. Bottle and stopper
- f. Test tubes
- g. Funnel
- h. pipettes
- i. beaker

Assignment Sheet #2

Evaluated to the satisfaction of the instructor.

Assignment Sheet #3

		RECIPIENT			
		A	B	AB	O
DONOR	A	+	-	+	-
	B	-	+	+	-
	AB	-	-	+	-
	O	+	+	+	+

(+) acceptable

(-) not acceptable

MICROBES AND DISEASES
UNIT XII

UNIT TEST

1. Label the parts of the microscope on the diagram.

2. Determine whether the following statements represent good or bad techniques in caring for a microscope by placing a G for a good technique or a B for a bad technique.

_____ a. Never use facial tissues to clean the glass lenses of the microscope.

_____ b. It is necessary to use only one hand to carry the microscope.

_____ c. Always cover the microscope when not in use.

_____ d. In the interest of saving your school money, it is advisable for you to try to repair the microscope when it does not function properly.

3. Describe 3 types of balances.

a.

b.

c.

4. Match the following statements concerning calibrated and volumetric glassware.

a. graduated cylinders

b. volumetric flasks

c. pipettes

_____ 1. Calibrated glass tubes open at both ends.

_____ 2. Designed to contain a single given quantity.

_____ 3. Used to measure small volumes of liquids with accuracy.

_____ 4. Designed to measure various quantities of liquid in graduated increments.

_____ 5. Usually have a ground glass stopper.

_____ 6. Has many calibration marks.

5. Differentiate weight/volume and volume/volume percent solutions.

6. Name the vital functions of living organisms.

7. Select from the list below factors influencing growth of microorganisms. Place an "X" in the appropriate blanks.

_____ a. Chlorophyll

_____ b. Activity

_____ c. Darkness

_____ d. Food

_____ e. Oxygen supply

_____ f. Temperature

_____ g. Moisture

_____ h. Noise

8. Match the classes of microorganisms on the right to their correct definitions. Place the correct numbers in the appropriate blanks.

_____ a. Organisms unable to grow or reproduce until they have taken over a living cell.

_____ b. Low forms of plant life lacking chlorophyll.

_____ c. Organisms smaller than bacteria but larger than viruses growing only within the cells of a living host.

_____ d. Single-cell animals capable of movement by various means.

_____ e. Single-cell organisms considered to be colorless plants

_____ f. Multicellular animals whose cells become differentiated to form tissues

1. Protozoa
2. Fungi
3. Bacteria
4. Rickettsiae
5. Viruses
6. Metazoa

9. Select from the list below diseases caused by protozoa. Place an "X" in the appropriate blanks.

_____ a. Malaria

_____ b. Trichinella

_____ c. Trichomonas infection

_____ d. Monilia infection

_____ e. Amebic dysentery

10. Classify types of fungi and diseases caused by them. Place an "M" for the diseases caused by molds and a "Y" for the diseases caused by yeasts in the appropriate blanks.

_____ a. Thrush

_____ b. Athlete's foot

_____ c. Ringworm

_____ d. Vaginitis

11. Select from the list below diseases caused by rickettsiae.

_____ a. G fever

_____ b. Rocky Mountain spotted fever

_____ c. Typhus

_____ d. Malaria

_____ e. Q fever

12. Select from the list below diseases caused by viruses. Place an "X" in the appropriate blanks.

_____ a. Rabies

_____ b. Measles (rubeola)

_____ c. Typhus

_____ d. Common cold (coryza)

_____ e. Mumps (epidemic parotitis)

_____ f. Q fever

_____ g. Shingles (herpes zoster)

_____ h. Monilia infection

_____ i. Fever blisters (herpes simplex)

_____ j. Influenza

_____ k. Trichinella

_____ l. Infantile paralysis (poliomyelitis)

_____ m. Malaria

_____ n. Chickenpox (varicella)

_____ o. Smallpox (variola)

_____ p. German measles (rubella)

13. Distinguish between classes of bacteria. Place an "N" for characteristics of nonpathogenic bacteria and a "P" for pathogenic characteristics in the appropriate blanks.

_____ a. Cause many diseases, such as syphilis, gonorrhea, tuberculosis, typhoid and paratyphoid fevers, and whooping cough.

_____ b. Assist in decomposition of organic matter.

_____ c. Aid in production of some foods and chemicals, such as cheeses, sauerkraut, cultured milk products, and lactic acid.

_____ d. Essential for life.

14. Name common parasitic helminths or worms which may infest the human organism.

a. _____________________________

b. _____________________________

c. _____________________________

d. _____________________________

e. _____________________________

15. List the methods of entry of bacteria in the human body.

a. ___________________________

b. ___________________________

c. ___________________________

d. ___________________________

16. Name three causes of disease.

a. ______________________________

b. ______________________________

c. ______________________________

17. List four ways to maintain asepsis.

a. ______________________________

b. ______________________________

c. ______________________________

d. ______________________________

18. Differentiate between the infectious disease types by matching the infectious types with their definitions.

a. local infection

b. secondary infection

c. generalized infection

d. focal infection

e. acute infection

f. primary infection

g. chronic infection

_____ 1. One which runs a rapid, severe, short course.

_____ 2. One which involves the whole body.

_____ 3. An infection produced by a primary cause.

_____ 4. A persistent bacterial infection of some organ or region which causes symptoms elsewhere in the body.

_____ 5. One which runs a slow course covering a period of weeks, months or years.

_____ 6. One which is confined by one spot or area of the body.

_____ 7. An original infection from which a second infection originates (the first infection in time or order).

19. List four factors which determine the presence of an infection.

a. ______________________________

b. ______________________________

c. ______________________________

d. ______________________________

20. Place an "X" beside the methods of laboratory diagnosis of infectious diseases and a "O" beside the methods of destroying microorganisms in the external environment.

_____ a. smear

_____ b. chemicals

_____ c. heat

_____ d. radiation

_____ e. culture

21. Place an "N" beside the items that represent non-specific defense reactions.

_____ a. inflammatory response

_____ b. mechanical and chemical barriers

_____ c. active immunity

_____ d. individual resistance

_____ e. passive immunity

_____ f. racial or group resistance

22. List the signs and symptoms of an acute inflammation.

a. ______________________________

b. ______________________________

c. ______________________________

d. ______________________________

e. ______________________________

23. Define active and passive immunity.

24. Match the functions of blood to their definitions.

a. Nutritive

b. Respiratory

c. Protection

d. Excretory

e. Regulatory

_____ 1. Provides for elimination of cell wastes.

_____ 2. Provides internal balance of heat and fluids.

_____ 3. Provides cells with oxygen and elimination of carbon dioxide.

_____ 4. Provides tissue cells with food substance.

_____ 5. Provides for defense and resistance to disease.

25. List the four components of blood.

1. ______________________________

2. ______________________________

3. ______________________________

4. ______________________________

26. Match the blood types to their antigen found in the red blood cell.

a. Type A

b. Type B

c. Type AB

d. Type O

_____ 1. AB

_____ 2. A

_____ 3. (no antigens)

_____ 4. B

27. Describe procedure in each method of blood collection.

a. Venipuncture

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

11.

12.

13.

14.

15.

16.

17.

b. Capillary puncture

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

28. Determine whether the following statements about urine are true or false. Mark the true statements with a T and the false statements with an F.

_____ a. The three processes involved in the formation of urine are filtration, reabsorption and secretion.

_____ b. Urine is a concentrated, aqueous solution.

_____ c. Analysis of physical characteristics of urine includes the following: Volume excreted within a 12 hour period, color, odor and pH reaction.

_____ d. The characteristic color of urine is attributable to urochrome, a pigment derived from bile.

29. Match terms to their correct definitions.

_____ a. A person not infected by, but transporting harmful bacteria.

_____ b. The study of resistance to disease

_____ c. Keeping yourself, the patient and her/his surroundings as clean as possible.

_____ d. People who have type AB blood.

_____ e. The study of bacteria.

_____ f. The study of the formed elements of the blood.

_____ g. A substance lethal to bacteria; drugs used to destroy bacterial diseases

_____ h. Red blood cells.

_____ i. Platelets.

_____ j. The study of relationship of factors determining frequency and distribution of disease.

1. antibiotic
2. epidemiology
3. antigen
4. leukocytes
5. immunology
6. thrombocytes
7. infection
8. vaccine
9. erythrocytes
10. asepsis
11. hematology
12. "universal recipient"
13. bacteriology
14. parasite
15. saprophyte
16. carrier

_____ k. Organism that lives within, upon, or at the expense of another living organism known as the host.

_____ l. A substance which stimilates the formation of antibodies when it enters the body.

_____ m. Organism that lives upon the dead remains of plants and animals.

_____ n. A substance developed from a killed or live, weakened bacteria, virus or rickettsia.

_____ o. White blood cells.

_____ p. The entrance of living agents into tissues, their subsequent growth and damage to tissues.

30. Identify common laboratory glassware.

31. Sketch pictures of microorganisms from prepared cultures.

(NOTE: If activities 30 and 31 have not been completed prior to the test, ask the instructor when they should be completed.)

MICROBES AND DISEASES
UNIT XII

ANSWERS TO TEST

1. See transparency master of the parts of the microscope.

2. G a.

   B b.

   G c.

   B d.

3. a. Triple beam balance

   A triple beam balance has three marked beams. The beam closest to the student is numbered 1 through 10. Each number represents 1 gram. Each gram is divided into 10 parts, thus each division represents one/tenth of a gram. This balance will weigh objects as small as one/tenth of a gram. Beams two and three are used for weighing larger quantities.

   b. Double pan balance

   To use the double pan balance, weights are added to the right pan. The object to be weighed is placed in the left pan. The needle swings in the center of the balance and rests on zero when accurate balance has been achieved.

   c. Analytical balance

   The analytical balance is a sensitive and precise instrument which weighs with a precision of .1 mg. (.0001 gm.)

4. c 1.

   b 2.

   c 3.

   a 4.

   b 5.

   a 6.

5. Weight/volume solutions contain a weight of solute in a volume of solution. Usually the solute is solid, but may be liquid or gas.

   Volume/volume solutions contain a volume of solute in a volume of solution. The solute is a liquid.

6. a. metabolism
   b. growth
   c. reproduction
   d. irritability
   e. motion
   f. protection

7. c, d, e, f, g

8. a. 5
   b. 2
   c. 4
   d. 1
   e. 3
   f. 6

9. a, c, e

10. a. Y
    b. M
    c. M
    d. Y

11. b, c, e

12. a, b, d, e, g, i, j, l, n, o, p

13. a. P
    b. N
    c. N
    d. N

14. a. Roundworm
    b. Pinworm
    c. Hookworm
    d. Trichinella
    e. Flatworm

15. a. Mouth
    b. Cuts in the Skin
    c. Mucus membrane
    d. Breathing

16. a. heredity
    b. unknown
    c. microorganisms

17. a. handwashing
    b. sterilization
    c. disinfection
    d. control of pests

18. 1. e
2. c
3. b
4. d
5. g
6. a
7. f

19. a. portal of entry
b. number of organisms
c. resistance of host
d. virulence or organism

20. X a.
0 b.
0 c.
0 d.
X e.

21. a, b, d, f

22. a. redness
b. heat
c. pain
d. swelling
e. loss of function

23. Active immunity - immunity produced by the body when an antigen is introduced into the body.

Passive immunity - immunity produced when antibodies produced by another person are injected into the body.

24. d 1.
e 2.
b 3.
a 4.
c 5.

25. red cells
white cells
platelets
plasma

26. c 1.
a 2.
d 3.
b 4.

27. a. Venipuncture is the method of choice for the collection of several ml. of blood.

    1. Identify the patient using I.D.

    2. Greet the patient and explain the procedure.

    3. Bare arm above elbow.

    4. Apply tourniquet above the elbow (avoid discomfort to patient). Ask the patient to clench fist, causing veins to distend.

    5. Inspect patient's veins and select suitable site for puncture.

    6. Cleanse puncture site with alcohol sponge.

    7. Insert needle into vein, bevel side up.

    8. If using syringe, pull plunger back gently until required amount of blood is collected. (NEVER push plunger to force blood and/or air back into the vein).

    9. Release tourniquet, instruct patient to unclench fist.

    10. Remove needle quickly.

    11. Place fresh alcohol sponge over the wound.

    12. Bend patient's elbow to apply pressure on wound.

    13. Place blood in labeled containers.

    14. Place adhesive bandage (Band-Aid) over wound.

    15. Cleanse syringe and needle with cold water.

    16. Observe patient at all times for signs of discomfort, fainting, or nausea.

    17. Gather all materials used, thank patient for cooperation, and deliver blood to laboratory.

b. Capillary puncture is the method of choice when small quantities of blood are needed.

    1. Identify patient, using I.D.

    2. Greet patient and explain procedure.

    3. Be sure you have all the necessary equipment.

4. Cleanse the puncture site with an alcohol sponge, and dry with a second dry sponge.

5. Use sterile, disposable lancet.

6. Grasp finger (ear lobe) and with quick, firm movement, make a deep puncture.

7. Wipe away the first drop of blood as it may contain foreign material.

8. Collect blood as required for testing (capillary tubes, slides, or diluting pipettes).

9. Cleanse wound with alcohol sponge and dry the site. Ask patient to hold the sponge over the wound until bleeding stops.

10. Gather all materials, including used lancet and sponges, thank patient for cooperation, and deliver blood to laboratory.

28. _T_ a. _F_ c.

_F_ b. _T_ d.

29.

a.	16	e.	13	i.	6	m.	15
b.	5	f.	11	j.	2	n.	18
c.	10	g.	1	k.	14	o.	4
d.	12	h.	9	l.	3	p.	7

30. Evaluated to the satisfaction of the instructor.

31. Evaluated to the satisfaction of the instructor.

UNIT XIII

METRICS FOR HEALTH OCCUPATIONS*

UNIT OBJECTIVE

After completing this unit, the student will be able to trace the historical development of the metric system, identify terms, recognize symbols, and define common metric prefixes and root words associated with this system of measurement. This knowledge will be evidenced through demonstration and by successfully completing a unit test.

SPECIFIC OBJECTIVES

After completing this unit of instruction, the student will be able to:

1. Explain briefly the history of the metric system
2. Discuss some advantages in using the metric system
3. Observe common metric prefixes and root words
4. Identify the basic metric symbols
5. Identify rules of notation
6. Explain the five types of basic metric measurement
7. Relate facts in conversion of metric measurements to English measure
8. Read and interpret a conversion chart
9. Recognize and use metric terms, units, and symbols used in Health Occupations Education
10. Recognize and use metric equivalents in Health Occupations
11. Use instruments, tools, and devices for measurement tasks in Health Occupations Education (HOE)
12. Identify and use metric and customary units interchangeably in ordering, using products, and supplies in Health Occupations Education
13. Complete a variety of exercises in utilizing the metric system

---

*Reprinted with permission of Occupational Curriculum Laboratory, East Texas State University from Health Occupations Education Units of Instruction Volume II, 1979.

UNIT XIII

METRICS FOR HEALTH OCCUPATIONS

SUGGESTED ACTIVITIES

I. Instructor

  A. Provide objective sheet

  B. Provide information and assignment sheets

  C. Discuss objective sheets

  D. Pass out information sheets

  E. Discuss information and assignment sheets

  F. Passout assignment sheets and explain directions

  G. Make transparencies

  H. Discuss metric charts

  I. Give test and evaluate results

II. Student

  A. Read and discuss objective sheet

  B. Read information sheets

  C. Complete assignment sheets

  D. Interpret metric charts

  E. Take part in class discussion

  F. Bring to class examples of how metrics can be used in various health occupations

III. Included in this unit

  A. Objective sheet

  B. Information sheets

  C. Transparency masters

    1. TM-1--Equivalent Chart

    2. TM-2--Conversion Chart

3. TM-3--Table of Metric Measurements
4. TM-4--Tables of Data
5. TM-5--Metric--Customary Equivalent

D. Assignment sheets

1. Assignment Sheet #1--Prefixes, Symbols and Values
2. Assignment Sheet #2--Length
3. Assignment Sheet #3--Record the Actual Length
4. Assignment Sheet #4--Estimating and Measuring the Length of Items in Millimeters
5. Assignment Sheet #5--Finding the Area of a Rectangle
6. Assignment Sheet #6--Identifying Volume
7. Assignment Sheet #7--Identifying Volume and Capacity in Cubic Centimeters
8. Assignment Sheet #8--Determining Units of Mass in Measuring Particular Articles
9. Assignment Sheet #9--Determining Mass and Weight
10. Assignment Sheet #10--Converting Temperatures--Both Celsius and Fahrenheit
11. Assignment Sheet #11--Converting Yards, Miles, and Pounds
12. Assignment Sheet #12--Comparison of the Metric System to English System
13. Assignment Sheet #13--Converting a Value in One System to the Corresponding Value in the Other
14. Assignment Sheet #14--Converting the Metric Equivalents Exercise
15. Assignment Sheet #15--Converting Milliliters to Liters Exercise
16. Assignment Sheet #16--Converting Liters to Milliliters Exercise

17. Assignment Sheet #17--Converting Grams to Kilograms Exercise
18. Assignment Sheet #18--Converting Kilograms to Grams Exercise
19. Assignment Sheet #19--Changing Units to Work
20. Assignment Sheet #20--Metric Grid
21. Assignment Sheet #21--Any Way You Want It
22. Assignment Sheet #22--Which Tool for the Job
23. Assignment Sheet #23--Converting Metric Measurement to Customary Units
24. Assignment Sheet #24--Complete a Requisition Form

E. Answers to the Assignments Sheets

F. Unit Test

G. Answers to Unit Test

IV. References

A. Audiovision, Think Metric. Dallas: South-Western Publishing, Co., 1975.

B. Barbrow, Louis E. What About Metrics. United States Department of Commerce, Washington D.C., 1973.

C. Belout Tool Corporation, Discover Metrics. Edison, NewJersey, Belout Tool Corporation, 1972.

D. Cooper, Gloria and Joel Magios ed. Metrics for Nurses Aides. The Center for Vocational Education: Ohio State University Press, Columbus, Ohio, 1974.

E. Cooper, Gloria and Joel Magios eds. Metrics for Dietetic Technicians. The Center for Vocational Education: Ohio State University Press, Columbus, Ohio, 1974.

F. Cooper, Gloria and Joel Magios eds. Metrics for Nursing (RN). The Center for Vocational Education: Ohio State University Press, Columbus, Ohio, 1974.

G. Cunningham, James B. Teaching Metric Simplified. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1976.

H. Hanguard, James. Fun and Games with Metrics. Englewood Cliffs, New Jersey: Prentice-Hall Learning System, Inc. 1974.

I. Johnson, Julia E. Metric System. New York, Wilson, Co., 1926.

J. Kelly, Gerard. Metric System Simplied. New York, Sterling Publishing Co., Inc., 1974.

K. Miller, David. Metric for Licensed Practical Nursing. Dallas, Allyn and Bacon, Inc. 1973.

L. Miller, David. Understanding the Metric System. Dallas, Allyn and Bacon, Inc., 1973.

M. Turner, Rufus. Metric for the Millions. New York, Howard W. Sams and Co., Inc.

UNIT XIII

METRIC FOR HEALTH OCCUPATIONS

INFORMATION SHEET

I. History of the metric system

   A. First proposed in 1690 by Gabriel Mouton, Vicar of St. Paul, Lyons, France, who saw the need of a different unit of measurement

   B. After 100 years elasped, the national assembly of France in 1790 requested the metric system

   C. The metric system has a base of ten

   D. All other units are a power of ten times this base unit

   E. The metric system was officially adopted in France in 1840

   F. During the 19th century the metric system became the primary system. It was adopted by most of the other European nations, and presently it is officially used in more than 130 countries.

   G. In 1866 an act of Congress legalized the metric system as a secondary system of weights and measures in the United States

   H. In 1960, the Eleventh General Conference on Weights and Measurement met in Paris, the conference adopted the system international d' units with the international abbreviation SI. The metric system is sometimes referred to as the international system (SI)

II The advantages of using the metric system

   A. Used by most nations in the world and is becoming the universal language of measurement

   B. Simply stated and the units are logically related to immutable standards

   C. Eliminates confusion concerning mass, force, and weight

   D. Easy to use

E. Could stimulate the economy by standardizing all units of measure

F. Could improve communication among the world's people

G. Convenient to use in health-related occupations

H. Decimally constructed, conforming to the U.S. Monetary system

I. Would increase exports to those countries using metric system

J. Could competitively put the United States at a disadvantage because most great industrial countries use the metric system

III. Common metric prefixes and root words

A. Kilo--thousand, a kilo is one thousand (10^3) meters

B. Hecto--hundred, a hecto is one hundred (10^2) meters

C. Deca or Deka -- ten, a decameter or dekameter

D. Deci -a work element which means one-tenth ($0.1=10^{-1}$) of a meter

E. Centi-a word element which means one-hundredth ($0.01=10^{-2}$) of a meter

F. Mili-a word element which means one-thousandth ($0.001=10^{-3}$) of a meter

IV. The basic metric symbols
(Note: Liter and meter also can be spelled litre and metre, but this is the British form.)

A. mm--Millimeter

B. cm--centimeter

C. m--meter

D. Km--kilometer

E. cm^2--square centimeter

F. m^2--square meter

G. ha--hectare

H. ml--milliliter

I. l--liter

J. cm^3--Centimeter

K. m^3--cubic meter

L. mg--milligram

M. g--gram

N. kg--kilogram

O. t--metric ton

V. Rules of notation

A. Symbols are not capitalized unless the unit is a a proper name (mm not MM).

B. Symbols are not followed by periods (m not m.).

C. Symbols are not followed by an s for plurals (25 g not 25 gs).

D. A space separates the numerals from the unit symbols (4 l not 4l).

E. Spaces, not commas, are used to separate large numbers into groups of three digits (45 271 km not 45,271 km).

F. A zero precedes the decimal point if the number is less than one (o.52 g not .52 g).

G. If dual dimensions are used, show the nonmetric unit in parentheses 23 cm (9.06 in.).

H. Common use values should be rounded off rather than quoted in precise figures unless there is a definite need of exact measurements. Height is listed as 162 cm, not as 162.13 cm.

I. Use the correct capital and lower case letter for unit and multiple unit symbols.
k for kilo, K for Kelvin
m for meter, M for Mega

VI. Five types of basic metric measurements

A. Length

1. The meter is the base unit for measuring length and distance in the metric system.

2. The meter is divided into multiples and submultiples of 10.

3. Common metric units of length or distance are shown in the table below.

Basic Unit Meters (m)

Common Multiples	Common Submultiples
deka (da)=10	deci (d)=0.1 or 1/10
1 dekameter (dam)=10 meters	1 decimeter (dm)=0.1 or 1/10 meter
hecto (h)=100	
1 hectometer (hm)=100 meters	centi (c)=0.01 or 1/100 meter
kilo=100	
1 kilo (km)=1000 meters	mili (m)=0.001 or 1/1000
	1 milimeter (mm)=0.001 or 1/1000 meter

B. Area

1. Area is determined by finding the number of units contained within a figure or object.

2. Area is always expressed in square units, such as square meters, square decimeters, or square centimeters.

3. When abbreviating a square measure in the metric system, such as square centimeters, it is usually written in the form cm^2.

4. The exponent 2 is used to indicate square.

5. Metric units of area are shown on the next page.

Common Metric Units of Area	
square meters	m^2
square decimeters	dm^2
square centimeters	cm^2
square millimeters	mm^2
square kilometers	km^2

C. Volume or capacity

1. The volume of a figure or object refers to the numbers of cubic units it contains.
2. In the metric system the basic unit for determining volume is the cubic meter (m^3).
3. When abbreviating a cubic measure such as cubic meter, it is usually written in the form m^3.
4. The exponent 3 is sometimes used to indicate a cubic measure.
5. Occasionally, a cubic measure will be expressed as "cc" for cubic centimeters, or even "cu cm".
6. The preferred SI form is the use of the exponent 3.

Common Metric Units of Volume	
cubic meter	m^3
cubic decimeter	dm^3
cubic centimeter	cm^3
cubic millimeter	mm^3

To find the volume of a rectangular solid, multiply:

$$V = l \times w \times h$$

Volume=length x width x height

D. Mass

1. The mass of an object is a measure of the amount of matter in the object.
2. The amount is always the same unless you add or subtract some matter from the object.
3. Weight is the term that most people use when they are referring to mass.
4. The weight of an object is affected by gravity. The mass of an object is not.
5. The metric system does not measure weight; it measures mass.

Base Unit Kilogram (kg)

1 kilogram=1000 grams

Multiples

gram (g)
1 gram = 1 gram

dekagram (dag)
1 dekagram=10 grams

hectogram (hg)
1 hectaogram=100 grams

decigram=0.1 or 1/10 grams

centigram (cg)
1 centigram=0.01 or 1/100 grams

milligram (mg)
1 milligram=0.001 or 1/1000 grams

1 metric ton (1)=1000 kilograms

E. Temperature

1. The SI base unit for temperature is the Kelvin. Its symbol is a capital K.
2. On the Kelvin scale, water freezes at 273.15 K and boils at 373.15 K. This provides a temperature interval from freezing to boiling of 100 K.
3. The Kelvin scale is used primarily by scientists for precision measurement of temperature.
4. This is not a practical scale to use for common temperature measurements.

5. The Celsius scale, based on the Kelvin, is used as the common metric measure of temperature.

6. The symbol for Celsius is C and is referred as degree Celsius (°C).

7. One degree Celsius, formerly called centigrade, is equal to exactly one Kelvin.

8. On the Celsius scale, water freezes at 0 °C and boils at 100 °C.

9. The range from freezing to boiling is exactly 100 °C or 100 K. Thus the relationship is established between the Kelvin scale and the Celsius scale.

10. For a conversion from Celsius to Kelvin, add 273.15 to the Celsius value (K = C + 273.15).

Common Celsius Temperatures and their Fahrenheit Equivalents

0°C	Freezing point of water	32°F
10°C	A warm winter day	50°F
20°C	A mild spring day	68°F
30°C	A warm summer day	86°F
37°C	Body temperature	98.6°F
100°C	Boiling point of water	212°F

VII. Facts in conversion of metric measurement to English measures

A. To change meters into yards, multiply the number of meters by 1.1 (this number is approximate).

B. To change from kilometers to miles, multiply the number of kilometers by .6 (this number is approximate).

C. To change kilogram to pounds, you must multiply the number of kilograms by 2.2 (this number is approximate).

VIII. Interpreting the conversion chart. (see TM-4).

A. Two methods

1. Factor-label method in which unit factors (ratios equal to one) are multiplied and labels cancelled leaving the desired unit.
2. The Algebraic method, in which the algebraic equation is set up and solved.

B. Utilizing techniques for conversion (Example: 2 m = 200 cm)

1. Factor-label method--(using TM-4)

$$2\ \cancel{m} \times \frac{100\ cm}{1\ \cancel{m}} = \frac{200\ cm}{1} = 200\ cm$$

2. Algebraic method--(using TM-4)

$$X: 2\ m = 100\ cm : 1\ \cancel{m}$$
$$2x = 100\ cm$$
$$x = 100\ cm$$

IX. Metric terms, units, and symbols used in Health Occupations Education

METRIC UNITS FOR HEALTH OCCUPATIONS

Quantity	Unit	Symbol	Use
Linear dimensions	centimeter	cm	Orthopedic ropes, anatomical part, height/length of patient
	millimeter	mm	Anatomical measurement, linens for bed protection
Square dimensions	square centimeter	cm^2	Linens, disposable/bed protectors
Fluid flows	milliliters	ml/min	Article decontamination, drainage collection
Mass	gram	g	Body mass, food portions
	kilogram	kg	Body mass, ortopedic weight
*Volume and capacity	cubic centimeter	cm^3(cc.)	I and O measurements, bodily secretions, dietary containers
	milliliter	ml	I and O measurements, bodily secretions, dietary containers
	liter	l	I and O measurements
Temperature	degree Celsius	°C	Body temperature, baths, sterilization

*Note: Medical symbol for cubic centimeter will probably remain cc. (cm^3). Also, cubic centimeter (cc). and milliliter (ml) will be used interchangeably.

X. Using metric equivalents in Health Occupations Education

A. Meters, Centimeters, and Millimeters

1. There are 100 centimeters in one meter; thus

   2 m = 2 x 100 cm = 200 cm
   3 m = 3 x 100 cm - 300 cm
   36 m = 36 x 100 cm = 3600 cm

2. There are 1000 millimeters in one meter; so

   2 m = 2 x 1000 mm = 2000 mm
   3 m = 2 x 1000 mm = 3000 mm
   24 m = 24 x 1000 mm = 2400 mm

3. Note: ½ of a meter can be written 0.5 m (five-tenth of a meter.) ¼ of a centimeter can be written 0.25 cm (twenty-five hundredths of a centimeter.)

4. This means that if you want to change three-fourths of a meter to millimeters, you would multiply by 1000. So,

$$\begin{aligned} 0.75 \text{ m} &= 0.75 \times 1000 \text{ mm} \\ &= \frac{75}{100} \times 1000 \text{ mm} \\ &= \frac{75}{75} \times \frac{1000}{100} \text{ mm} \\ &= 750 \text{ mm} \end{aligned}$$

This means that 0.75 m= 750 mm

B. Milliliters to Liters

1. There are 1000 milliliters in one liter. This means that

   2000 milliliters is the same as 2 liters.
   3000 milliliters is the same as 3 liters.
   12000 milliters is the same as 12 liters.

2. Since there are 1000 milliliters in each liter, one way to change milliliters to liters is to divide by 1000. For Example:

$$1000 \text{ ml} = \frac{1000}{1000} \text{ liter} = 1 \text{ liter}$$

or

$$2000 \text{ ml} = \frac{2000}{1000} = 2 \text{ liters}$$

and as a final example:

$28000 \text{ ml} = \frac{28000}{1000} \text{ liters} = 28 \text{ liters}$

Change 57 milliliters to liters

$57 \text{ ml} = \frac{57}{1000} \text{ liters} = 0.057 \text{ liters}$

(Fifty-seven thousandths of a liter)

3. One-half of a meter can be written 0.5m (five-tenths of a meter.) One-fourth of a centimeter can be written 0.25 cm (twenty-five hundredths of a centimeter)

4. If you want to change three-fourths of a meter to millimeters, you would multiply by 1000. So,

$0.75 \text{ m} = 0.75 \times 1000 \text{ mm}$

$= \frac{75}{100} \times 1000 \text{ mm}$

$= \frac{75}{75} \times \frac{1000}{100} \text{ mm}$

$= 750 \text{ mm}$ This means that o.75 m = 750 mm

C. Liters to Milliliters

1. To change liters to millimeters, it is important to remember that there are 1000 milliliters in one liter, or 1 liter = 1000 milliliters.

2. 2 liters = 2 x 1000 ml = 2000 ml

   7 liters = 7 x 1000 ml = 7000 ml

   13 liters = 12 x 1000 ml = 13000 ml

D. Grams to Kilograms

1. There are 1000 grams in one kilogram.

2. 2000 grams is the same as 5 kilograms.

   5000 grams is the same as 5 kilograms.

   700 grams is the same as 0.7 kilograms.

3. To change from grams to kilograms, use the same procedure for changing from milliters to liters.

E. Kilograms to Grams

1. To change kilograms to grams, multiply by 1000.

2. 4 kg = 4 x 1000 g = 4000 g

23 kg = 23 x 1000 g = 23000 g

0.75 g = 0.75 x 1000 g = 750 g

XI. Suggestions when using metrics in the classroom include the following:

A. Find out in advance whether English or metric units, tools, instruments, or products are needed for a task.

B. Examine the tool or instrument before using it.

C. The metric system is a decimal system. Look for units marked off in whole numbers in multiples of 10.

D. Look for metric symbols on the tools or gages such as, m, mm, kg, etc.

E. Look for decimal fractions (0.25) or decimal mixed fractions (2.50) rather than common fractions (3/8).

F. Some products may have a special metric symbol, such as a block M, to show they are metric.

G. Don't force devices which are not fitting properly.

XII. Using metric and customary units of measurement interchangeably (Conversion Table)

A. Determine which conversion table is needed.

B. Look up the known number in appropriate column; if not listed, find numbers you can add together to make the total of the known number.

C. Read the equivalent(s) from the next column.

Equivalents Conversion Charts

Metric-English Equivalents

Approximate Values

1 mm = 0.04 inch
1 cm = 0.4 inch
1 m = 39.37 inches
1 km = 0.6 mile
1 cm^2 = 0.16 square inch
1 m^2 = 10.8 square feet
1 m^2 = 1.2 square yards
1 hectare = 2.5 acres
1 cm^3 = 0.06 cubic inch
1 m^3 = 35.3 cubic feet
1 m^3 = 1.3 cubic yards
1 ml = 0.034 ounce
1 cl = 0.34 ounce
1 l = 2.1 pints
1 l = 1.06 quarts
1 l = 0.26 gallon
1 g = 0.035 ounce
1 kg = 2.2 pounds
1 metric t = 1.1 U.S. ton

English-Metric Equivalents

Approximate Values

1 inch = 25.4 mm
1 inch = 2.54 cm
1 foot = 0.305 m
1 yard = 0.91 m
1 mile = 1.61 km
1 square inch = 6.5 cm^2
1 square foot = 0.09 m^2
1 square yard = 0.8 m^2
1 acre = 0.4 hectare
1 cubic inch = 16.4 cm^3
1 cubic foot = 0.03 m^3
1 cubic yard = 0.8 m^3
1 pint = 0.47 l
1 quart = 0.95 l
1 gallon = 3.79 l
1 ounce = 28.35 g
1 pound = 0.45 kg
1 U.S. ton = 0.9 metric ton

CONVERSION CHART

To convert:

from yards to meters, multiply by 0.9144

from inches to centimeters, multiply by 2.54

from miles to kilometers, multiply by 1.6093

from (U.S.) gallons to liters, multiply by 3.785

from pounds to kilograms, multiply by .453

To convert:

from centimeters to inches, multiply by 0.393

from meters to yards, multiply by 1.093

from kilometers to miles, multiply by 0.621

from liters to (U.S.) gallons, multiply by 0.264

from kilograms to pounds, multiply by 2.204

Table of Metric Measurements

length

10 millimeters (mm) = 1 centimeter (cm)
10 centimeters (cm) = 1 decimeter (dm)
10 decimeters (dm) = 1 meter (m)
10 meters (m) = 1 dekameter (dam)
10 dekameters (dam) = 1 hectometer (hm)
10 hectometers (hm) = 1 kilometer (km)

area

100 square millimeters (mm^2) = 1 square centimeter (cm^2)
100 square centimeters (cm^2) = 1 square decimeter (dm^2)
100 square decimeters (dm^2) = 1 square meter (m^2)
100 square meters (m^2) = 1 square dekameter (dam^2)
100 square dekameters (dam^2) = 1 square hectometer (hm^2)
100 square hectometers (hm^2) = 1 square kilometer (km^2)

volume

1000 cubic millimeters (mm^3) = 1 cubic centimeter (cm^3)
1000 cubic centimeters (cm^3) = 1 cubic decimeter (dm^3)
1000 cubic decimeters (dm^3) = 1 cubic meter (m^3)

capacity

10 milliliters (ml) = 1 centiliter (cl)
10 centiliters (cl) = 1 deciliter (dl)
10 deciliters (dl) = 1 liter (l)
10 liters (l) = 1 dekaliter (dal)
10 dekaliters (dal) = 1 hectoliter (hl)
10 hectoliters (hl) = 1 kiloliter (kl)
1 cubic decimeter (dm^3) = 1 liter (l)

mass and weight

10 milligrams (mg) = 1 centigram (cg)
10 centigrams (cg) = 1 decigram (dg)
10 decigrams (dg) = 1 gram (g)
10 grams (g) = 1 dekagram (dag)
10 dekagrams (dag) = 1 hectogram (hg)
10 hectograms (hg) = 1 kilogram (kg)
1 cubic decimeter (dm^3) = 1 liter (l) = 1 kilogram (kg)

Tables of Data

Units of Length

	Millimeters	Centimeters	Inches	Feet	Yards	Meters
1 mm. =	1.0	0.1	0.03937	0.00328	0.0011	0.001
1 cm. =	10.0	1.0	0.3937	0.03281	0.0109	0.01
1 in. =	25.4	2.54	1.0	0.0833	0.0278	0.0254
1 ft. =	304.8	30.48	12.0	1.0	0.333	0.3048
1 yd. =	914.40	91.44	36.0	3.0	1.0	0.9144
1 m. =	1000.0	100.0	39.37	3.2808	1.0936	1.0

1μ = 1 mu = 1 micron* = 0.001 millimeter. 1 mm. = 1000μ.
1 km. = 1 kilometer = 1000 meters = 0.6215 mile.
1 mile = 5280 feet = 1.609 kilometers.
1 Micron is also called micrometer, μm = 10^{6}

Units of Volume (fluid or liquid)

	Milliliters	U.S. Fluid Drams	Cubic Inches	U.S. Fluid Ounces	U.S. Fluid Quarts	Liters
1 ml. =	1.0	0.2705	0.061	0.03381	0.00106	0.001
1 fl. ʒ =	3.697	1.0	0.226	0.125	0.00391	0.00369
1 cu. in. =	16.3866	4.4329	1.0	0.5541	0.0173	0.01639
1 fl. ℥ =	29.573	8.0	1.8047	1.0	0.03125	0.02957
1 qt. =	946.332	256.0	57.75	32.0	1.0	0.9463
1 L. =	1000.0	270.52	61.025	33.815	1.0567	1.0

1 gallon = 4 quarts = 8 pints = 3.785 liters.
1 pint = 473.16 ml.

Units of Weight

	Grains	Grams	Apothecaries* Ounces	Avoirdupois Pounds	Kilograms
1 gr. =	1.0	0.0648	0.00208	0.0001429	0.000065
1 gm. =	15.432	1.0	0.03215	0.002205	0.001
1 ℥ =	480.0	31.1	1.0	0.06855	0.0311
1 lb. =	7000.0	453.5924	14.583	1.0	0.45354
1 kg. =	15432.358	1000.0	32.15	2.2046	1.0

1γ = 1 gamma = 1 microgram = 0.001 milligram; 1000γ = 1 mg.
1 mg. = 1 milligram = 0.001 gm.; 1000 mg. = 1 gm.
1 grain = 64.8 mg.; 1 mg. = 0.0154 grain.

Metric-Customary Equivalents Chart

1 cm = 0.39 inch
1 m = 3.28 feet
1 m = 1.09 yards
1 km = 0.62 mile
1 cm^2 = 0.16 sq in
1 m^2 = 10.8 sq ft
1 m^2 = 1.2 sq yd
1 hectare = 2.5 acres
1 cm^3 = 0.06 cu in
1 m^3 = 35.3 cu ft
1 m^3 = 1.3 cu yd

1 inch = 2.54 cm
1 foot = 0.305 m
1 yard = 0.91 m
1 mile = 1.61 km
1 sq in = 6.5 cm^2
1 sq ft = 0.09 m^2
1 sq yd = 0.8 m^2
1 acre = 0.4 hectare
1 cu in = 16.4 cm^3
1 cu ft = 0.03 m^3
1 cu yd = 0.8 m^3

1 ml = 0.2 tsp
1 ml = 0.07 tbsp
1 l = 33.8 fl oz
1 l = 4.2 cups
1 l = 2.1 pts
1 l = 1.06 qt
1 l = 0.26 gal
1 gram = 0.035 oz
1 kg = 2.2 lb
1 metric ton = 2205 lb
1 kPa = 0.145 psi

1 tsp = 5 ml
1 tbsp = 15 ml
1 fl oz = 29.6 ml
1 cup = 237 ml
1 pt = 0.47 l
1 qt = 0.95 l
1 gal = 3.79 l
1 oz = 28.3 g
1 lb = 0.45 kg
1 ton = 907.2 kg
1 psi = 6.895 kPa

Millilitres to Fluid Ounces (Approximate)

ml	fl.oz	ml	fl.oz.	ml	fl.oz.
100	3.4	10	.3	1	.03
200	6.8	20	.7	2	.07
300	10.1	30	1.0	3	.10
400	13.5	40	1.4	4	.14
500	16.9	50	1.7	5	.17
600	20.3	60	2.0	6	.20
700	23.7	70	2.4	7	.24
800	27.1	80	2.7	8	.27
900	30.4	90	3.0	9	.30

5 ml (4.9 ml) = 1 teaspoon
15 ml (14.8 ml) = 1 tablespoon

Fluid Ounces to Millilitres (Approximate)

fl.oz.	ml	fl.oz.	ml	fl.oz.	ml
10	295.7	1	29.6	.1	3
20	591.5	2	59.2	.2	6
30	878.2	3	88.7	.3	9
40	1182.9	4	118.3	.4	12
50	1478.7	5	147.9	.5	15
60	1774.4	6	177.4	.6	18
70	2070.2	7	207.0	.7	21
80	2365.9	8	236.6	.8	24
90	2661.6	9	266.2	.9	27

1 teaspoon = 5 ml (4.9 ml)
1 tablespoon = 15 ml (14.8 ml)

UNIT XIII

METRICS FOR HEALTH OCCUPATIONS

ASSIGNMENT SHEET #1--PREFIXES, SYMBOLS, AND VALUES

Directions: Complete the table below by placing the correct prefixes, symbols, and values in the proper place.

UNIT	SYMBOL	EQUIVALENT IN METERS
1. kilometer		
2. hectometer		
3. dekameter		
4. meter		
5. decimeter		
6. centimeter		
7. millimeter		

UNIT XIII

METRICS FOR HEALTH OCCUPATIONS

ASSIGNMENT SHEET #2--LENGTH

Directions: From the following list decide what metric unit of length you would use when measuring.

1. The meter replaces the customary foot and yard. The meter is usually used for expressing dimensions of larger objects and short distances.
2. The kilometer replaces the mile and is used for measuring long distances.
3. The centimeter often replaces the foot and inch when used for measuring such items as body dimensions, cloth products (e.g., towels and sheets), and many other common household articles.
4. The millimeter replaces the inch and is used when measuring small dimensions or very short lengths. It is used instead of the centimeter for precision measurements.

EXERCISE

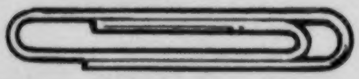
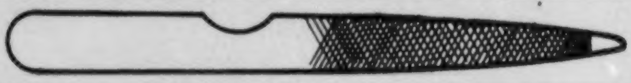
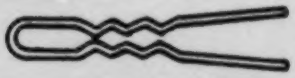
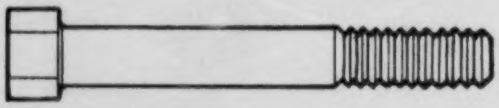
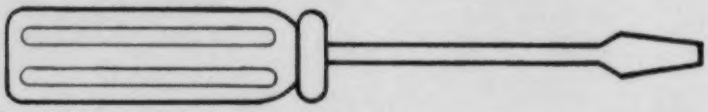
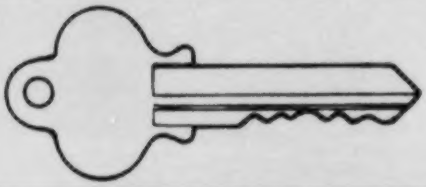
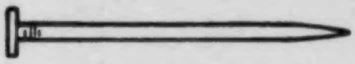
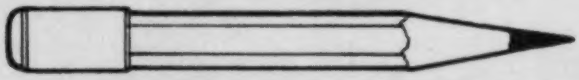
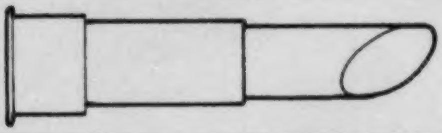
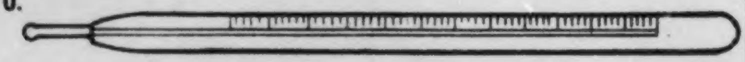
1. the length of a swimming pool __________ 1.
2. the length of a pencil __________ 2.
3. the distance between cities __________ 3.
4. the thickness of a piece of plate glass __________ 4.
5. the width of a swimming pool __________ 5.
6. the height of a building __________ 6.
7. the height of a person __________ 7.
8. the diameter of a small piece of copper tubing __________ 8.
9. the width of a tablecloth __________ 9.
10. the diameter of a nickel __________ 10.

UNIT XIII

METRICS FOR HEALTH OCCUPATIONS

ASSIGNMENT SHEET #3--RECORD THE ACTUAL LENGTH

Directions: Compare the actual measurement with your estimate to see how well you estimated the length of each object. The actual measurement for the first item is given. This should aid you in estimating the length of the other objects.

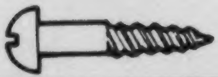
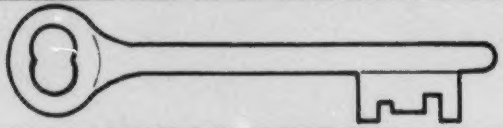
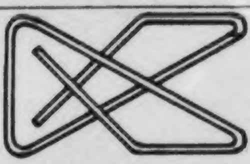
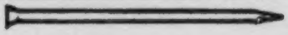
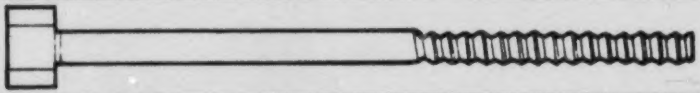
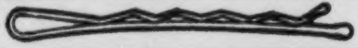
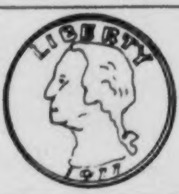
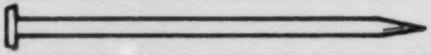
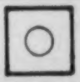
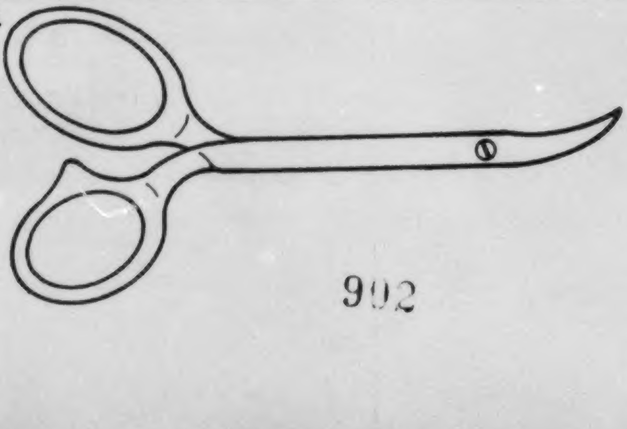
	Estimate in Centimeters	**Actual Measurement**
1. 		5 cm.
2. 		
3. 		
4. 		
5. 		
6. 		
7. 		
8. 		
9. 		
10. 		

UNIT XIII

METRICS FOR HEALTH OCCUPATIONS

ASSIGNMENT SHEET #4--ESTIMATING AND MEASURING THE LENGTH OF ITEMS IN MILLIMETERS

Directions: Estimate the length of each object. Compare your estimate with the actual length in millimeters. The actual length of the first item is given.

	Estimate in Millimeters	Actual Measurement
1. 		30 mm.
2. 		
3. 		
4. 		
5. 		
6. 		
7. 		
8. 		
9. 		
10. 		

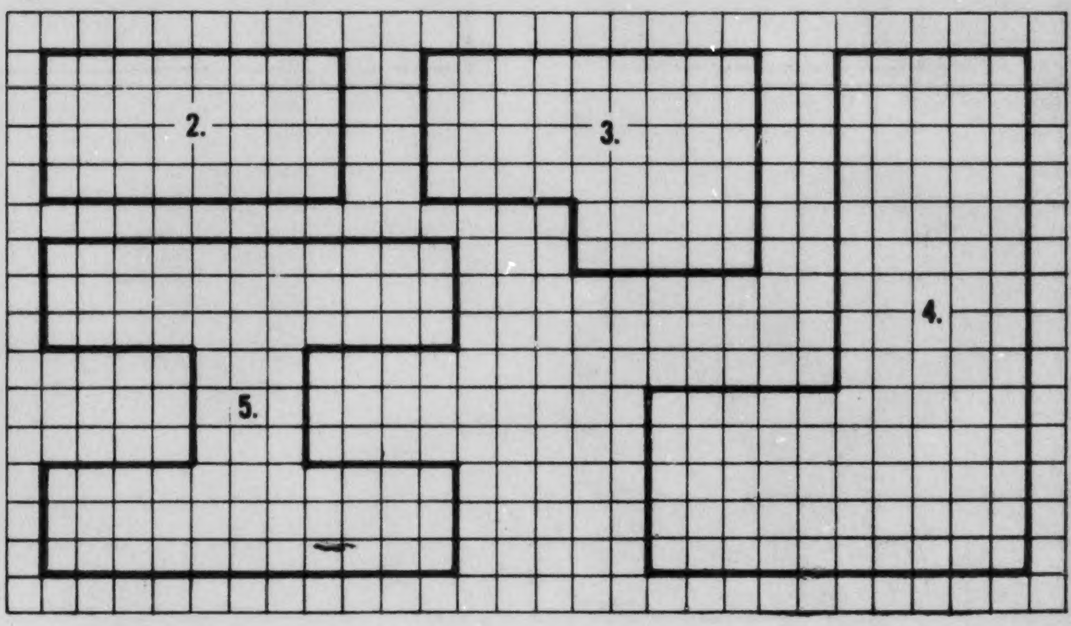
UNIT XIII

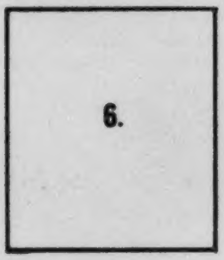
METRICS FOR HEALTH OCCUPATIONS

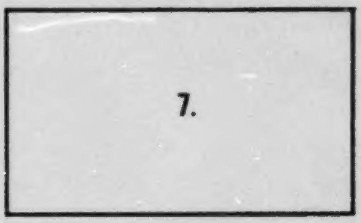
ASSIGNMENT SHEET #5--FINDING THE AREA OF A RECTANGLE

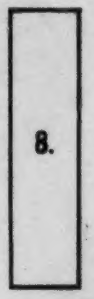
Directions: Each small square in the illustration represents one square centimeter. Determine the area of the large rectangle. Then find the area of each of the four smaller figures with in the rectangle.

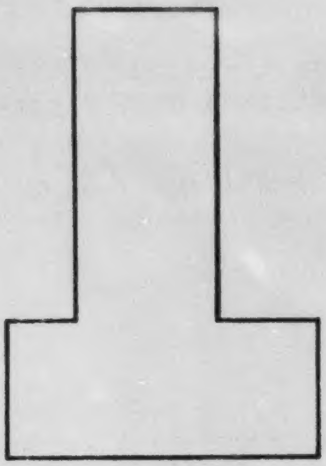
1.

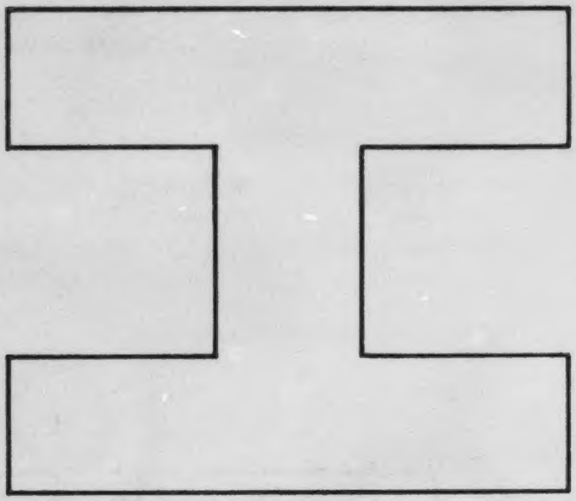












1. ____________ cm^2
2. ____________ cm^2
3. ____________ cm^2
4. ____________ cm^2
5. ____________ cm^2
6. ____________ cm^2
7. ____________ cm^2
8. ____________ cm^2
9. ____________ cm^2
10. ____________ cm^2

UNIT XIII

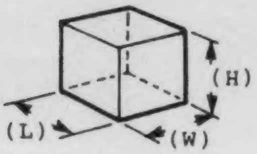
METRICS FOR HEALTH OCCUPATIONS

ASSIGNMENT SHEET #6--IDENTIFYING VOLUME AND CAPACITY IN CENTIMETERS AND MILLIMETERS

Directions: Use your metric ruler to determine the length, width, and height of the figures below, along the edges indicated. Then determine the volume of each.

1. (L)____mm

2. (H)____mm

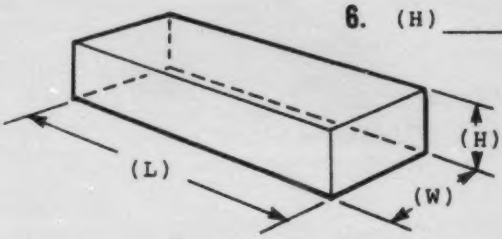


3. (W)____mm

4. Total____mm^3

5. (L)____mm

6. (H)____mm

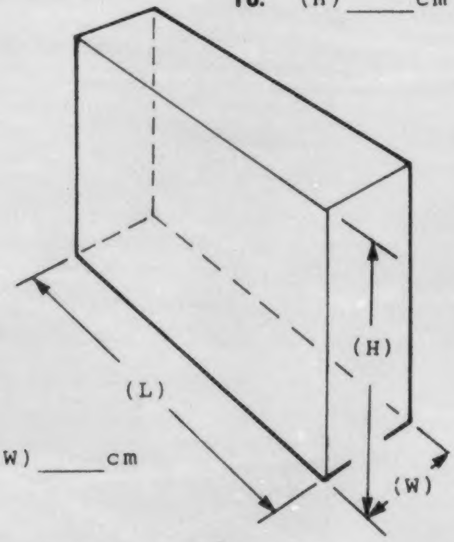


7. (W)____mm

8. Total____mm^3

9. (L)____cm

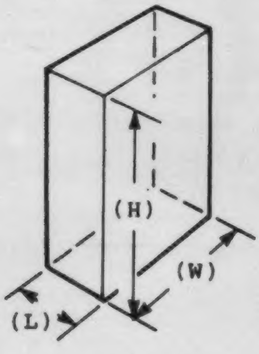
10. (H)____cm



11. (W)____cm

12. Total____cm^3

13. (L)____cm



14. (H)____cm

15. (W)____cm

16. Total____cm^3

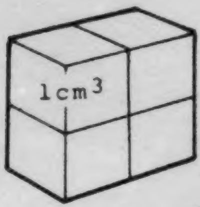
UNIT XIII

METRICS FOR HEALTH OCCUPATIONS

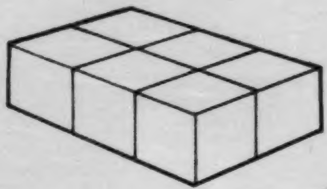
ASSIGNMENT SHEET #7--IDENTIFYING VOLUME AND CAPACITY IN CUBIC CENTIMETERS

Directions: Using a metric ruler, determine the volume of each of the figures below:

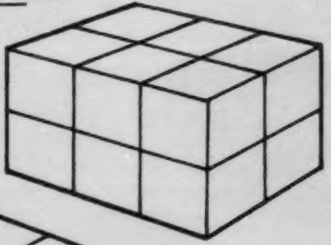
1. ____cm^3



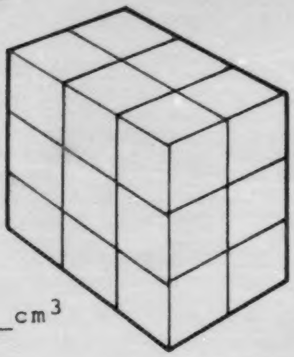
2. ____cm^3



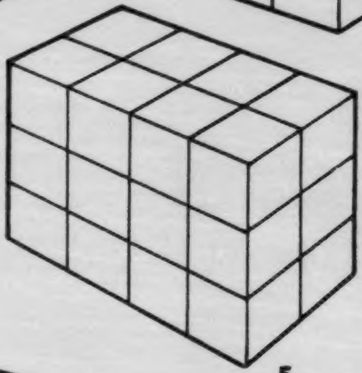
3. ____cm^3



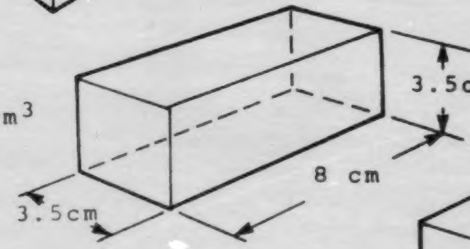
4. ____cm^3



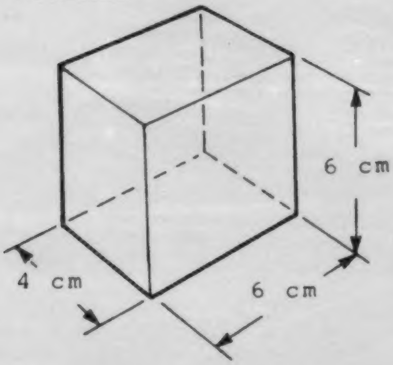
5. ____cm^3



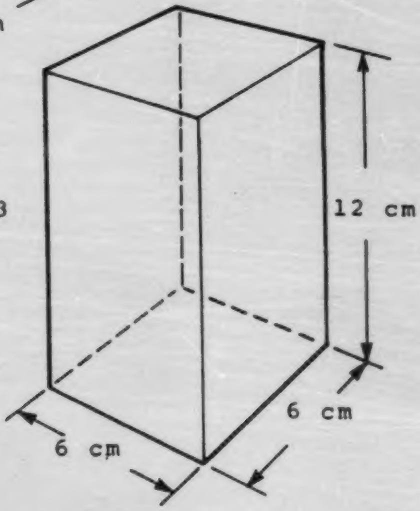
6. ____cm^3


3.5cm
8 cm
3.5cm

7. ____cm^3



8. ____cm^3


12 cm
6 cm
6 cm

UNIT XIII

METRICS FOR HEALTH OCCUPATIONS

ASSIGNMENT SHEET #8--DETERMINING UNITS OF MASS IN MEASURING PARTICULAR ARTICLES

Directions: When expressing weight, the most commonly used metric measures are the kilogram, gram, milligram, and metric ton. The kilogram is equal to 2.2 pounds and usually replaces the pound when used to express weight for items of more than 2 pounds. The gram is used much more often and is used in place of the ounce. Most consumer goods now sold by the pound will be sold in quantities of 500 grams, or half a kilogram. The milligram is used quite extensively in the medical and scientific fields as well as in the drug industry. Practically all bottles of tablets are now listed in either milligrams, or grams. The metric ton replaces the customary ton and is used to indicate items of great weight. These two should not be confused. The customary ton is equal to only 907.18 kilograms, while the metric ton is equal to 1000 kilograms. What metric unit of mass would probably be used to measure the following?

1. Box of detergent ____________________
2. Loaf of bread ____________________
3. Large beef roast ____________________
4. A person's weight ____________________
5. Small box of rice ____________________
6. Weight of a load of coal ____________________
7. Small box of matches ____________________
8. One aspirin tablet ____________________

UNIT XIII

METRICS FOR HEALTH OCCUPATIONS

ASSIGNMENT SHEET #9--DETERMINING MASS AND WEIGHT

Directions: Use the table of equivalent measures to determine the following:

EQUIVALENT MEASURES

1 cubic decimeter = 1 liter (l)

1 liter (l) = 1 kilogram (kg)

1 cubic centimeter (cm^3) = 1 milliliter (ml)

1 milliliter (ml) = 1 gram (g)

1. One liter of water equals _____________ dm^3.
2. One liter of water weighs _____________ kg.
3. Five kilograms equals ________________ l.
4. One liter of water equals _____________ cm^3.
5. One liter of water weighs _____________ g.
6. 25 milliliters of water equal __________ cm^3.
7. 25 milliliters of water weighs __________ g.
8. 60 cubic centimeters equals ____________ ml.
9. 60 cubic centimeters weighs ___________ g.

UNIT XIII

METRICS FOR HEALTH OCCUPATIONS

ASSIGNMENT SHEET #10--CONVERTING TEMPERATURES--BOTH CELSIUS AND FAHRENHEIT

Directions: Using the necessary formula below, convert the following temperatures.

From Celsius to Fahrenheit	From Fahrenheit to Celsius
$F = \frac{9}{5}C + 32$	$C = \frac{5}{9}(F - 32)$
Convert 20°C to F.	Convert 95°F to C.
$F = \frac{9}{5}C + 32$	$C = \frac{5}{9}(F - 32)$
$F = \frac{9}{5}(20) + 32$	$C = \frac{5}{9}(95 - 32)$
$F = 36 + 32$	$C = \frac{5}{9}(63)$
$F = 68°$	$C = 35°$

Occasionally it is necessary to use minus temperatures (negative numbers) when converting from one system to another. When this is done you must be sure to use the rules for signed numbers.

Convert -5°C to F	Convert 14°F to C	Convert -4°F to C
$F = \frac{9}{5}C + 32$	$C = \frac{5}{9}(F - 32)$	$C = \frac{5}{9}(F - 32)$
$F = \frac{9}{5}(-5) + 32$	$C = \frac{5}{9}(14 - 32)$	$C = \frac{5}{9}(-4 - 32)$
$F = -9 + 32$	$C = \frac{5}{9}(-18)$	$C = \frac{5}{9}(-36)$
$F = 23°$	$C = -10°$	$C = -20°$

1. 25°C = ____________°F
2. 10°C = ____________°F
3. 90°C = ____________°F
4. 150°C = ____________°F
5. 50°F = ____________°C
6. -22°F = ______________°C
7. 275°F = ______________°C
8. 5°F = ______________°C
9. 320°F = ______________°C
10. -20°C = ______________°F

UNIT XIII

METRICS FOR HEALTH OCCUPATIONS

ASSIGNMENT SHEET #11--CONVERTING YARDS, MILES, AND POUNDS

Directions: Convert the following, using Information Sheet VII as a guide. Show your work when asked.

A. 65 meters = _______ yards

B. 12.4 meters = _______ yards

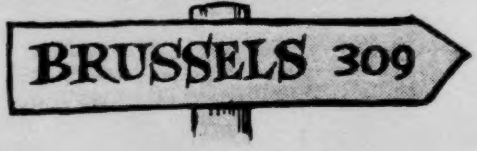
C. 2500 meters = _______ yards

D. 1 km = ________ yards

E. Garland and Commerce, Texas are about 100 kilometers apart. How many miles apart are they? ______________

F. Dallas and Conroe, Texas are about 5500 kilometers apart. Approximately how many miles is that? _________ Show work.

G. If you are traveling in Europe, and see a road sign saying:



approximately how many miles is it to Brussels? _______

H. A speed of 65 km per hour would be equal to approximately ______________ miles per hour?

I. How many miles are there in 11,000 meters? ____________ Show work.

J. 10 kg = __________ lbs. Show work.

K. 45 kg = __________ lbs. Show work.

L. 100 kg = __________ lbs. Show work.

UNIT XIII

METRICS FOR HEALTH OCCUPATIONS

ASSIGNMENT SHEET #12--COMPARISON OF THE METRIC SYSTEM TO ENGLISH SYSTEM

Directions: The student will complete the statement by placing the signs (<) for less than and (>) for more than to make the statement true.

1. A centimeter is ( ) than half an inch
2. An m is a little ( ) than a yard.
3. A l is a little ( ) than a quart.
4. A kg is a little ( ) than 2 lbs.
5. A km is a little ( ) than a mile.

UNIT XIII

METRICS FOR HEALTH OCCUPATIONS

ASSIGNMENT SHEET #13--CONVERTING A VALUE IN ONE SYSTEM TO THE CORRESPONDING VALUE IN THE OTHER

Directions: Use TM-4 to acquire necessary data in solving the following problems. Use either method you desire.

1. 3 gal = _____ pt.
2. 1 mil = _____ km
3. 4 oz = ______ g
4. 2 gal = ______ l
5. 3 m^3 = _____ in^3

UNIT $XIII_I$

METRICS FOR HEALTH OCCUPATIONS

ASSIGNMENT SHEET #14--CONVERTING THE METRIC EQUIVALENTS

Directions: Complete the chart below.

Meter m	Centimeter cm	Millimeter mm
1	100	1 000
2	200	
3		
9		
		5 000
74		
0.8	80	
0.6		600
	2.5	25
		148
	639	

UNIT XII_I

METRICS FOR HEALTH OCCUPATIONS

ASSIGNMENT SHEET #15--CONVERTING MILLILITERS TO LITERS

Directions: Place the missing figure in the chart below.

Milliliters (ml)	Liters (l)
3000	3
6000	
	8
14,000	
	23
300	0.3
700	
	0.9
250	
	0.47
275	

UNIT XIII

METRICS FOR HEALTH OCCUPATIONS

ASSIGNMENT SHEET #16--CONVERTING LITERS TO MILLILITERS

Directions: Complete the following chart.

Liters l	Milliliters ml
8	8 000
5	
46	
	32 000
0.4	
0.53	
	480

UNIT XIII

METRICS FOR HEALTH OCCUPATIONS

ASSIGNMENT SHEET #17--CONVERTING GRAMS TO KILOGRAMS

Directions: Complete the following chart.

Grams g	Kilograms kg
4 000	4
9 000	
23 000	
	8
300	
275	

UNIT XIII

METRICS FOR HEALTH OCCUPATIONS

ASSIGNMENT SHEET #18--CONVERTING KILOGRAMS TO GRAMS

Directions: Complete the following chart.

Kilograms kg	Grams g
7	7 000
11	
	25 000
0.4	
0.63	
	175

UNIT XIII

METRICS FOR HEALTH OCCUPATIONS

ASSIGNMENT SHEET #19--CHANGING UNITS AT WORK

Directions: The things listed below are used in Health Occupations. They may be measured in different metric units. Change each of the following to metric equivalents by completing these statements.

1. 500 cm of sterile gauze is _____________ m.
2. 1250 ml of liquid is ______________ l.
3. 5 cm wide bed protector is ________________ mm.
4. 2500 g child weighs ______________ kg.
5. 120 mm of sheet from head of bed is _________ cm.
6. 0.25 liter of milk is ___________ ml.
7. 0.5 liter of glucose solution is ____________ ml.
8. 1.5 m of body height is ___________ cm.
9. 5 g of orthopedic weight is __________ mg.
10. 500 mg of infant formula is ____________ g.
11. 500 g of a specimen is ____________ kg.
12. 500 ml of concentrate is ___________ l.
13. 100 ml of emesis is ________ l.
14. 60 cm of bandage is __________ m.

UNIT XIII

METRICS FOR HEALTH OCCUPATIONS

ASSIGNMENT SHEET #20--METRIC GRID

Directions: The grid below contains the words needed to complete the statements found on the next page. Words may run across or down and sometimes may overlap. Write the words as you find them on the grid.

	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	F	R	T	S	S	C	M	D	D	E	C	I	M	A	L
2	C	H	L	I	T	E	R	P	E	L	E	V	E	N	S
3	I	J	O	E	F	O	O	T	O	A	N	B	S	M	T
4	N	O	F	B	G	I	E	F	I	F	T	E	E	N	H
5	C	U	B	I	C	K	K	E	L	V	I	N	M	N	I
6	H	N	K	H	C	I	O	S	A	M	P	E	R	E	R
7	T	C	X	J	U	L	H	E	A	A	K	Y	T	H	T
8	C	E	S	U	P	O	U	N	D	S	I	R	E	D	Y
9	W	W	E	T	O	G	F	C	S	S	L	Y	A	R	D
10	D	E	K	A	S	R	L	O	V	M	O	J	S	V	S
11	R	I	G	S	S	A	V	N	O	S	M	S	P	W	E
12	G	G	L	N	O	M	F	D	L	E	E	T	O	N	C
13	R	H	Y	A	D	E	C	I	U	R	T	N	O	D	O
14	A	T	H	R	E	E	C	C	M	U	E	K	N	I	N
15	M	H	H	E	C	T	A	R	E	G	R	E	E	K	D

Statements

1. The ______________ is slightly larger than 1 quart.
2. Three dimensions are needed to find _____________.
3. The _____________ number system is used in metrics.
4. The symbol for kilogram is ____________.
5. The metric prefix for one-hundredth is ___________.
6. The _____________ is shorter than one meter.
7. The _____________ is a little longer than 0.6 miles.
8. The mass of 1 cubic decimeter of water is __________.
9. A bathroom scale measures ______________.
10. The metric prefix for 10 is __________.
11. Another name for the metric system is abbreviated as
___________.
12. The abbreviation for centimeter is ______________.
13. 453.5924 grams is equal to one ____________.

UNIT XIII

METRICS FOR HEALTH OCCUPATIONS

ASSIGNMENT SHEET #21--ANY WAY YOU WANT IT

Directions: You are working in a hospital, clinic, doctor's office, or a laboratory. With the change to metric measures, some of the things you order or use are worded only in metric units. You will need to be familiar with appropriate customary equivalents in order to communicate with patients and suppliers who use customary unit. To develop your skills use TM-5 as reference and give the approximate metric quantity (both number and unit) for each of the following customary quantities.

Customary Quantity	Metric Quantity
1. 2 lbs. of orthopedic weight	
2. 4 qts. of clear solution	
3. 2 in. x 12 in. adhesive tape	
4. 100 lb. person	
5. 18 in. water column	
6. 2-gallon can	
7. 2-foot bandage	
8. 1 in. adhesive tape	
9. 50 ft. of orthopedic tape	
10. 4 fl. oz. of mouthwash	
11. 12 in. by 12 in. bed protector	
12. 1 gal. of alcohol	
13. 1 pt. of milk	
14. 2 qts. of sterilizing solution	
15. 1 tbsp. gelatin	
16. 6 fl. oz. glass of juice	

UNIT XII_I

METRICS FOR HEALTH OCCUPATIONS

ASSIGNMENT SHEET #22--WHICH TOOL FOR THE JOB

Directions: Select and describe use of tools, instruments, or devices to:

1. Take and record urine specimen
2. Prepare a clear solution
3. Compute, measure, and record I and O for a patient
4. Prepare a bath
5. Take and record oral temperature
6. Select the proper measure for a soup bowl
7. Take and record axillary temperature
8. Select the proper size of an ace bandage for a foot
9. Select the proper size roller dressing for a finger

UNIT XIII

METRICS FOR HEALTH OCCUPATIONS

ASSIGNMENT SHEET #23--CONVERTING METRIC MEASUREMENT TO CUSTOMARY UNITS

Directions: Use TM-5 as a reference in completing the assignment.

1. 235 ml = __________ fl. oz.
2. 950 ml = __________ fl. oz.
3. 16 fl. oz. = __________ ml
4. 3.5 fl. oz. = ________ ml
5. 550 ml = ___________ fl. oz.

UNIT XIII

METRICS FOR HEALTH OCCUPATIONS

ASSIGNMENT SHEET #24--COMPLETE A REQUISITION FORM

Directions: Using the items listed, convert the customary quantities to metric before filling out the form. Complete all the information (date, for, doctor, etc.) Use TM-5 as reference.

1. 1 pint of mouthwash
2. 1 quart of alcohol
3. 12 foot traction rope
4. 1 package of 12-inch by 12-inch bed protector

REQUISITION

____
Date

For ____________________

Dept. ____________________

Doctor ____________________

Deliver to ____________________

Qty	Unit	Item

Requested by ____________________

Approved by ____________________

UNIT XIII

METRICS FOR HEALTH OCCUPATIONS

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

	SYMBOL	EQUIVALENT IN METERS
1.	km	1000
2.	hm	100
3.	dam	10
4.	m	----
5.	dm	0.1
6.	cm	0.01
7.	mm	0.001

Assignment Sheet #2

1. meters
2. centimeters
3. kilometer
4. millimeters
5. meters
6. meters
7. centimeters
8. millimeters
9. centimeters
10. millimeters

Assignment Sheet #3

1. 5 cm
2. 9 cm
3. 4 cm
4. 7 cm
5. 10 cm
6. 6 cm
7. 5 cm
8. 8 cm
9. 6 cm
10. 11 cm

Assignment Sheet #4

1. 30 mm
2. 70 mm
3. 35 mm
4. 40 mm
5. 100 mm
6. 50 mm
7. 24 mm
8. 60 mm
9. 10 mm
10. 90 mm

Assignment Sheet #5

1. 448 cm^2
2. 32 cm^2
3. 46 cm^2
4. 95 cm^2

5. 75 cm^2
6. 10.5 cm^2
7. 15 cm^2
8. 4 cm^2
9. 18 cm^2
10. 38 cm^2

Assignment Sheet #6

1. 10 mm
2. 10 mm
3. 10 mm
4. 1000 mm
5. 40 mm
6. 10 mm
7. 15 mm
8. 6000 mm^3
9. 5 cm
10. 10 cm
11. 1.5 cm
12. 30 cm
13. 1 cm
14. 3 cm
15. 2 cm
16. 6 cm^3

Assignment Sheet #7

1. 4 cm^3
2. 6 cm^3
3. 12 cm^3

4. 18 cm^3
5. 24 cm^3
6. 98 cm^3
7. 144 cm^3
8. 432 cm^2

Assignment Sheet #8

1. grams
2. grams
3. kilograms
4. kilograms
5. grams
6. metric ton
7. grams
8. milligrams

Assignment Sheet #9

1. 1 dm^3
2. 1 kg
3. 5 l
4. 1000 cm^3
5. 1000 g
6. 25 cm^3
7. 25 g
8. 60 ml
9. 60 g

Assignment Sheet #10

1. 77°F
2. 50°F

3. 194°F

4. 302°F

5. 10°C

6. -30°C

7. 135°C

8. 15°C

9. 160°C

10. -4°F

Assignment Sheet #11

A. 73.5

B. 136.4

C. 3750.0

D. 1100.0

E. 60 miles

F. 330 = (550 x .6 = 330)

G. 185.4 (309 x .6 = 185.4)

H. 30 miles per hour

I. 6.6 miles 11000 m = 11 km 11 x .6 = 6.6

J. 10 x 2.2 = 22.0

K. 45 x 2.2 = 99.0

L. 100 x 2.2 = 220.0

Assignment Sheet #12

1. < less than

2. > greater than

3. > greater than

4. > greater than

5. < less than

Assignment Sheet #13

1. 3 gal = 24 pt.

$$3\ \text{g}\cancel{\text{a}}\text{l} \times \frac{4\ \cancel{\text{q}}\text{t}}{1\ \text{g}\cancel{\text{a}}\text{l}} \times \frac{2\ \text{pt}}{1\ \text{q}\cancel{\text{t}}} = \frac{24\ \text{pt}}{1} = 24\ \text{pt.}$$

2. 1 mi = 1.61 km

$$1\ \text{mi} \times \frac{5280\ \cancel{\text{ft}}}{1\ \text{m}\cancel{\text{i}}} \times \frac{12\ \text{i}\cancel{\text{n}}}{1\ \cancel{\text{ft}}} \times \frac{25.4\ \text{m}\cancel{\text{m}}}{1\ \text{i}\cancel{\text{n}}} \times \frac{1\ \cancel{\text{m}}}{1000\ \text{mm}} \times \frac{1\ \text{k}\cancel{\text{m}}}{1000\ \cancel{\text{m}}} =$$

$$\frac{1609344\ \text{km}}{1000000} = 1.609344 = 1.61\ \text{(rounded off)}$$

3. 4 oz = 114 g

$$4\ \text{o}\cancel{\text{z}} \times \frac{1\ \cancel{\text{lb}}}{16\ \text{o}\cancel{\text{z}}} \times \frac{1\ \cancel{\text{kg}}}{2.20\ \cancel{\text{lb}}} \times \frac{1000\ \text{g}}{1\ \text{k}\cancel{\text{g}}} = \frac{4000\ \text{g}}{35.2} = 133.6363$$

rounded off to 114 g

4. 2 gal = 7.55 l

$$2\ \text{g}\cancel{\text{a}}\text{l} \times \frac{4\ \text{q}\cancel{\text{t}}}{1\ \text{g}\cancel{\text{a}}\text{l}} \times \frac{1\ \text{l}}{1.06\ \text{q}\cancel{\text{t}}} = \frac{8\ \text{l}}{1.06} = 7.5471698\ \text{l} =$$

rounded off to 7.55 l

5. $3\ \text{m}^3$ = 183000 in^3

$$3\ \cancel{\text{m}}^3 \times \frac{(1000\ \text{mm})^3}{1\ \cancel{\text{m}}^3} \times \frac{1\ \text{in}^3}{(25.4\ \text{mm})^3} = \frac{30000000\ \text{in}^3}{16387.065} =$$

$$\frac{30000000}{16387.064} = 18307123\ \text{rounded to} = 183000\ \text{in}^3$$

Assignment Sheet #14

Meter	Centimeter	Millimeters
1	100	1000
2	200	2000
3	300	3000
9	900	9000
5	500	5000
74	7400	74000
0.8	80	800
0.6	60	600
0.025	2.5	25
0.148	14.8	148
6.39	639	6390

Assignment Sheet #15

Milliliters	Liters
3000	3
6000	6
8000	8
14000	14
23000	23
300	0.3
700	0.7
900	0.9
250	0.25
470	0.47
275	0.275

Assignment Sheet #16

Liters l	Milliliters ml
8	8000
5	5000
46	46000
32	32000
0.4	400
0.53	530
0.48	480

Assignment Sheet #17

Grams g	Kilograms kg
400	4
900	9
2300	23
8000	8
300	0.3
275	0.275

Assignment Sheet #18

Kilograms kg	Grams g
7	7000
11	11000
25	25000
0.4	400
0.63	630
0.175	175

Assignment Sheet #19

1. 5m
2. 1.250 liter
3. 50 mm
4. 2.5kg
5. 12cm
6. 250ml
7. 500ml
8. 150cm
9. 5000mg

10. 0.5g

11. 0.5kg

12. 0.5 1

13. 0.1 1

14. 0.6m

Assignment Sheet #20

	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	F	R	T	S	S	C	M	D	D	E	C	I	M	A	L
2	C	H	L	I	T	E	R	P	E	L	E	V	E	N	S
3	I	J	O	E	F	O	O	T	O	A	N	B	S	M	T
4	N	O	F	B	G	I	E	F	I	F	T	E	E	N	H
5	C	U	B	I	C	K	K	E	L	V	I	N	M	N	I
6	H	N	K	H	C	I	O	S	A	M	P	E	R	E	R
7	T	C	X	J	U	L	H	E	A	A	K	Y	T	H	T
8	C	E	S	U	P	O	U	N	D	S	I	R	E	D	Y
9	W	W	E	T	O	G	F	C	S	S	L	Y	A	R	D
10	D	E	K	A	S	R	L	O	V	J	O	Y	S	V	S
11	R	I	G	S	S	A	V	N	O	S	M	S	P	W	E
12	G	G	L	N	O	M	F	D	L	E	E	T	O	N	C
13	R	H	Y	A	D	E	C	I	U	R	T	N	O	D	O
14	A	T	H	R	E	E	C	C	M	U	E	K	N	I	N
15	M	H	H	E	C	T	A	R	E	G	R	E	E	K	D

ANSWERS

1. liter
2. volume
3. decimal
4. kg
5. centi
6. yard
7. kilometer
8. 1 kilogram
9. weight
10. deka
11. SI
12. cm
13. pound

Assignment Sheet #21

1. 0.9 kg
2. 3.8 l
3. 5.08 cm x 30.48 cm
4. 45 kg
5. 45.72 cm
6. 7.58 l
7. 0.61 m
8. 2.54 cm
9. 15.25 m
10. 118.4 ml
11. 30.48 cm by 30.48 cm
12. 3.79 l
13. 0.47 l
14. 1.9 l
15. 15 ml
16. 177.6 ml

Assignment Sheet #22

Answers depend on the items used for the activities. Activities will be evaluated to the satisfaction of the instructor.

Assignment Sheet #23

1. 7.97 fl. oz.
2. 32.1 fl. oz.
3. 437.1 ml
4. 103.7 ml
5. 18.6 fl. oz.

Assignment Sheet #24

1. 0.47 l
2. 0.95 l
3. 3.66 mm
4. 30.48 cm by 30.48 cm

UNIT XIII

METRICS FOR HEALTH OCCUPATIONS

UNIT TEST

1. Name five important dates concerning the history of the metric system.

   a.

   b.

   c.

   d.

   e.

2. List seven advantages of using the metric system.

   a.

   b.

   c.

   d.

   e.

   f.

   g.

3. Define the following metric prefixes and root words.

   a. Kilo--

   b. Hecto--

   c. Deca--

   d. Deci--

   e. Centi--

   f. Milli--

4. Write the symbols for the following words.

   a. Millimeter _____
   b. Centimeter _____
   c. Meter _____
   d. Kilometer _____
   e. Square centimeter _____
   f. Square meter _____
   g. Hectare _____
   h. Milliliter _____
   i. Liter _____
   j. Centimeter cubed _____
   k. Cubic meter _____
   l. Milligram _____
   m. Gram _____
   n. Kilogram _____
   o. Metric ton _____

5. Answer the rules of notation by writing True or False before the sentences.

______a. Symbols are never to be capitalized.

______b. Symbols are not followed by periods.

______c. Symbols are not followed by an s for plurals.

______d. A space separates the numerals from the unit symbols.

______e. Spaces, not commas, are used to separate large number into groups of three digits.

______f. A zero precedes the decimal point if the number is greater than one.

______g. Liter and meter can be spelled either with an -re or -er ending.

______h. If dual dimensions are used, show the nonmetric unit in parentheses.

______i. Common use values should be rounded off rather than quoted in precise figures unless there is a definite need for exact measurement.

______j. Use the correct capital and lower case letters for units and multiple unit symbols.

6. Name the five types of metric measurement and the metric units of each measurement.

a.

(1)

(2)

(3)

(4)

(5)

(6)

b.

(1)

(2)

(3)

(4)

(5)

c.

(1) (3)

(2) (4)

d.

(1)

(2)

(3)

(4)

(5)

(6)

(7)

e.

(1)

(2)

List temperature comparisons for °C and °F below.

(a) ______ Freezing point of water ______

(b) ______ A warm winter day ______

(c) ______ A mild spring day ______

(d) ______ A warm summer day ______

(e) ______ Body temperature ______

(f) ______ Boiling point of water ______

7. Complete the statement of facts in conversion of metric measurement to English measure.

   a. To change metric into yards, multiply the number of meters by __________.

   b. To change from kilometers to miles, multiply the number of kilometers by ______________.

   c. To change kilograms to pounds, multiply the number of kilograms by ____________.

8. Interpret the conversion chart by working the following problems. See (TM-4). Use the factor label method.

a. 4m = ______cm

b. 3.5kg = ______oz.

c. 4 yd^2 = ______cm^2

d. 3 gal. = ______pt.

e. 2 gal. = ______l

9. Complete the chart on metric units for Health Occupations.

Quantity	Unit	Symbol	Use
1. Linear dimensions	centimeter		Orthopedic ropes, anatomical part, height/length of patient
		mm	Anatomical measurement, linens for bed protection
2. Surface dimensions		cm^2	
3. Fluid flows	milliliters per minute		Article decontamination, foley drainage collection
4. Mass	gram		Body mass, food portions
		kg	
5. Volume and capacity	cubic centimeter		I and O measurements, bodily secretions, dietary containers
		ml	
	liter		I and O measurement
6. Temperature		°C	

10. Complete the problems, using metric equivalents.

    a. 8 m = ______cn

    b. 6 m = ______mm

    c. 500 ml = ______l

    d. 0.65 l = ______ml

    e. 1000 g = ______kg

    f. o.25 kg = ______g

11. Measurement tasks in Health Occupation. Underline the correct measurement.

    a. Patient bodily secretions are measured in:

       (1) cubic centimeters

       (2) millimeters

       (3) kilograms

       (4) degrees Celsius

    b. The mass of an alluet body is measured in:

       (1) cubic centimeters

       (2) centimeters

       (3) milliliters

       (4) kilograms

    c. A roller bandage 200 centimeters long also has a length of:

       (1) 2,000 millimeters

       (2) 0.2 millimeters

       (3) 200 millimeters

       (4) 2 millimeters

    d. A 750 gram box of detergent is the same as:

       (1) 750 kilograms

       (2) 7,500 kilograms

(3) 7.5 kilograms

(4) 0.75 kilograms

e. The metric unit which replaces the gallon is:

(1) liter

(2) kiloliter

(3) gram

(4) kilogram

f. The metric unit which replaces the teaspoon or tablespoon for medicine dosage is:

(1) grams

(2) milliliters

(3) milligrams

(4) centimeters

g. For measuring Celsius you would use a:

(1) pressure gage

(2) thermometer

(3) container

(4) tape

12. List three steps used in finding equivalents between systems.

a.

b.

c.

13. Complete a variety of exercises using the metric system. (Assignment Sheets #1-#24)

(If activities listed in #13 above have not been completed prior to test, ask the instructor when they should be completed.)

UNIT XIII

METRICS FOR HEALTH OCCUPATIONS

ANSWERS TO UNIT TEST

1. The five important dates are:

   a. 1690--the year it was proposed

   b. 1790--the year France requested the metric system

   c. 1840--the year France officially adopted the metric system

   d. 1866--an act of Congress legalized the metric system as a secondary system of weights and measurements in the United States.

   e. 1960--the international d' units conference adopted the abbreviation (SI). The metric system is sometimes referred to as the international system.

2. The advantages should include:

   a. The metric system is used by most nations in the world and is becoming the universal language of measurement.

   b. The metric system is simple and the units are logically related to immutable standards.

   c. The metric system eliminates confusion concerning mass, force, and weight.

   d. The metric system is easy to use.

   e. Conversion to metric system would stimulate the economy.

   f. Speaking a common language of measurement could improve communication among the world's people.

   g. Computations using the metric units are convenient to use in health related occupations.

   h. The metric system is decimally constructed, conforming to our monetary system.

   i. Exports would increase to those countries using the metric system.

j. The United States may be competitively disadvantaged because most great industrial countries use the metric system.

3. Prefixes and root words should include:

   a. Kilo--thousand--a kilo is one thousand (10^3) meters

   b. Hecto--hundred--a hecto is one hundred (10^2) meters

   c. Deca--ten--a decameter is ten (10^1) meters

   d. Deci--a word element which means one-tenth ($0.1=10^{-1}$) of a meter

   e. Centi--a word element which means one-hundredth ($0.01=10^{-2}$) of a meter

   f. Milli--a word element which means one-thousandth ($0.001=10^{-3}$) of a meter

4. Basic metric symbols

   a. mm--millimeter

   b. cm--centimeter

   c. m--meter

   d. km--kilometer

   e. cm^2--square centimeter

   f. m^2--square meter

   g. ha--hectare

   h. ml--milliliter

   i. l--liter

   j. cm^3--cubic centimeter

   k. m^3--cubic meter

   l. mg--milligram

   m. g--gram

   n. kg--kilogram

   o. t--metric ton

5. a. F
   b. T
   c. T
   d. T
   e. T
   f. F
   g. T
   h. T
   i. T
   j. T

6. Five types of units and the metric measurement and the metric unit of each measurement answer should include:

   a. Length--is the base unit for measuring length and distance in the metric system.

      (1) deka (da) = 10
          1 dekameter (dam) = 10 meters

      (2) hecto (h) = 100
          1 hectometer (hm) = 100 meters

      (3) kilo = 1000
          1 kilometer (km) = 1000 meters

      (4) deci (d) = 0.1 or 1/10
          1 decimeter (dm) = 0.1 or 1/10 meter

      (5) centi (c) = 0.01 or 1/100 meter

      (6) milli (m) = 0.001 or 1/1000
          1 millimeter (mm) = 0.001 or 1/1000 meter

   b. Area--determined by finding the number of units contained within a figure or object.

      (1) square meters m^2

      (2) square decimeters dm^2

      (3) square centimeters cm^2

      (4) square millimeters mm^2

(5) square kilometers km^2

c. Volume or capacity--refers to the numbers of cubic units in a container.

(1) cubic meter m^3

(2) cubic decimeter dm^3

(3) cubic centimeter cm^3

(4) cubic millimeter mm^3

d. Mass--a measure of the amount of matter in the object.

(1) gram (g)
1 gram = 1 gram

(2) dekagram (dag)
1 dekagram = 10 grams

(3) hectogram (hg)
1 hectogram = 100 grams

(4) decigram = 0.1 or 1/10 grams

(5) centigram (cg)
1 centigram = 0.01 or 1/100 grams

(6) milligram (mg)
1 milligram = 0.001 or 1/1000 grams

(7) 1 metric ton (1) = 1000 kilograms

e. Temperature is measured on two scales:

(1) The Kelvin scale--used primarily by scientists for precision measurement of temperature.

(2) The Celsius scale--based on the Kelvin, is used as the common metric measure of temperature.

(a) 0°C Freezing point of water 32°F

(b) 10°C A warm winter day 50°F

(c) 20°C A mild spring day 68°F

(d) 30°C A warm summer day 86°F

e. 37°C Body temperature 98.6°F

f. 100°C Boiling point of water 212°F

7. a. 1.1

   b. .6

   c. 2.2

8. a. $4\ \cancel{\text{m}} \times \frac{100\ \text{cm}}{1\ \cancel{\text{m}}} = \frac{400\ \text{cm}}{1} = 400\ \text{cm}$

   b. $3.5\ \cancel{\text{kg}} \times \frac{2.20\ \text{lb}}{1\ \cancel{\text{kg}}} \times \frac{16\ \text{oz}}{1\ \cancel{\text{lb}}} = \frac{120\ \text{oz}}{1} = 120\ \text{g}$

   c. $4\ \text{yd} = \frac{(3\ \cancel{\text{ft}})^2}{1\ \cancel{\text{yd}}^2} \times \frac{(12\ \cancel{\text{in}})^2}{1\ \cancel{\text{ft}}^2} \times \frac{(2.54\ \text{cm})^2}{1\ \cancel{\text{in}}^2} = 33445.1\ \text{cm}^2$

   d. $3\ \text{gal} = \frac{4\ \cancel{\text{qt}}}{1\ \cancel{\text{gal}}} \times \frac{2\ \text{pt}}{1\ \cancel{\text{qt}}} = 24\ \text{pt}$

   e. $2\ \cancel{\text{gal}} = \frac{4\ \cancel{\text{qt}}}{1\ \cancel{\text{gal}}} \times \frac{1\ \cancel{\text{l}}}{1.06\ \cancel{\text{qt}}} = 7.55\ \text{l}$

9. Chart on metric units

Quantity	Unit	Symbol	Use
1. Linear dimensions	centimeter	cm	Orthopedic ropes, anatomical part, height/length of patient
	millimeter	mm	Anatomical measurement, linens for bed protection
2. Surface dimensions	square centimeter	cm^2	Linens, disposable bed protectors
3. Fluid flows	milliliters	ml/min	Article decontamination, drainage collection
4. Mass	gram	g	Body mass, food portions
	kilogram	kg	Body mass, orthopedic weight
5. Volume and capacity	cubic centimeter	cm^3 (cc.)	I and O measurements, bodily secretions, dietary containers
	milliliter	ml	I and O measurements, bodily secretions, dietary containers
	liter	l	I and O measurement
6. Temperature	degree Celsius	°C	Body temperature, baths, sterilization

10. Metric equivalents

    a. 8 m = 8 x 100 cm = 800 cm

    b. 6 m = 6 x 1000 mm = 6000 mm

    c. 500 ml = $\frac{500}{1000}$ liter = 0.5 liter (five-tenth of a liter) 500 ml is the same as one-half (0.5) of a liter.

    d. 0.65 liter = 0.65 x 1000 ml = 650 ml

    e. 1 kg

    f. 0.25 kg = o.25 x 1000 g - 250 g

11. Measuring tasks in Health Occupations

    a. 1

    b. 2

    c. 1

    d. 4

    e. 1

    f. 2

    g. 2

12. List should include:

    a. Which conversion table is needed,

    b. Look up the known number in appropriate column. If not listen, find numbers you can add together to make the total of the known number.

    c. Read the equivalent(s) from the next column.

13. Assignment sheets will be evaluated to the satisfaction of the instructor.

*SAFETY AND EMERGENCY CARE
UNIT XIV

UNIT OBJECTIVE

After completing this unit, the student will be aware of the need for safety, will recognize hazards at the medical facility and be able to list general rules of safety and fire prevention. Furthermore, the student will be able to evaluate acquired knowledge of first aid emergency measures for selected injuries. This knowledge will be evidenced by satisfactory completion of a unit test.

SPECIFIC OBJECTIVES

After completing this unit, the student will be able to:

1. Define safety and safety attitudes.
2. Discuss causes of accidents.
3. Identify the Health Care Institution's liability for safety.
4. List nine of the twelve general rules of safety.
5. Demonstrate and evaluate proper lifting and moving techniques.
6. Identify the Occupational Safety and Health Act (OSHA).
7. List safety precautions in patient care.
8. Identify safety precautions in the use of oxygen.
9. List safety precautions in housekeeping in the medical facility.
10. Identify safety practices in the medical laboratory.
11. Explain safety practices in the use of x-ray.

*Derived in part from Health Occupations Education Units of Instruction, Volume II, Unit XIX - Safety (copyright 1979). Used by permission of Occupational Curriculum Laboratory, East Texas State University.

12. List safety practices in dental assisting.
13. List safety measures for the pharmacy.
14. Discuss fire safety in the medical facility.
15. Recognize color codes for health care hazards.
16. Cite general safety reminders.
17. Test and evaluate your knowledge of first aid measures for selected emergencies.

SAFETY AND EMERGENCY CARE
UNIT XIV

SUGGESTED ACTIVITIES

I. Suggested activities for the instructor:

   A. Provide students with objective sheet.

   B. Discuss unit and specific objectives.

   C. Provide students with information sheet.

   D. Discuss information sheets.

   E. Provide information for students to use in completing assignment sheets.

   F. Discuss why accidents happen and how accidents are the result of carelessness, thoughtlessness, and ignorance.

   G. Ask students to report on personal experiences in which they were involved in accidents.

   H. Assist class in developing a hazard checklist with which students may evaluate the safety of their own homes.

   I. Discuss the moral, legal, and financial liability of health care institutions with regard to safety.

   J. Invite an insurance company representative to speak to the class on the moral, legal, and financial responsibilities of health care institutions.

   K. Ask students to consider and discuss why health care facilities have a moral obligation to promote and practice sound safety procedures.

   L. Invite the inservice program director of a local health care institution to discuss incident reports, stressing:
      - Importance of reporting all injuries, however slight, to clients or workers
      - Types of incident forms and how to properly complete them

M. Lead class discussion on the importance of reporting all injuries. Distribute sample accident or incident forms and allow students to fill out forms using hypothetical injury situations.

N. Have students identify unsafe conditions in drawings or photographs of:
- A frayed electrical cord
- An unlabeled bottle among several labeled bottles

O. Instruct students in body mechanics and good posture through the use of films, charts, and/or models.

P. Demonstrate correct body mechanics in lifting and moving, and lead class in practicing techniques.

Q. Through class discussion, develop a master list of keys to fire prevention, including the three elements necessary to start a fire, major cause of fires, and other causes specifically associated with health care institutions.

R. Show film or filmstrip on types of fires and fire extinguishers.

S. Tour a health care facility and ask students to note the following:
- Location of fire extinguishers
- Areas where different types of fire extinguishers are located
- Smoking regulations
- Cleanliness of corridors and stairs
- Congested traffic areas

In class, have students develop posters or charts illustrating the different types of equipment noted in the facility, their location, and their use.

T. Visit a fire station or ask a member of the local fire department to visit the class to demonstrate equipment and supervise students in practicing use of the equipment.

U. Ask students to role-play the dangers involved in practical jokes. Discuss penalties the health care facility may invoke to prevent such horseplay.

V. Invite a speaker from industry to discuss OSHA.

W. Write the following on the chalkboard and lead class discussion on specific measures to prevent injury from each type of hazard.
- Fires and explosions
- Poisons, corrosives, and caustic reagents
- Burns and scalds
- Lacerations
- Bacterial, viral, and parasitic infections
- Animal and insect bites
- Radiation

X. Have class simulate a fire drill in a health care institution. Assign students to specific responsibilities, such as:
- Closing doors
- Notifying appropriate personnel
- Running elevator
- Directing clients to safety

Y. Display floor plans of your school or a local health care facility, indicating exit routes and locations of fire alarms and fire extinguishers.

Z. Ask students to develop emergency fire plans for their own homes.

AA. Discuss and have students identify color codes for health hazards:
- Red for fire alarm boxes
- High visibility yellow for aisles to direct traffic flow
- Alert orange
- Safety green for first aid equipment
- Purple to designate radiation equipment
- Black and white for stairways, refuse cans, food dispensing equipment
- Caution blue

II. Instructional materials

A. Objective sheet

B. Information sheets

C. Transparency masters

1. TM-1 Do Not Leave Bed Cranks Extended

2. TM-2 Avoid Hazards in Transporting Patients on a Stretcher

3. TM-3 Clean Spills From Floor Immediately
4. TM-4 Avoid Hazards in Pharmacy
5. TM-5 Do Not Climb to Reach Equipment Without a Safety Ladder
6. TM-6 Approach Intersections With Care

D. Assignment sheets

1. Assignment Sheet # 1 - Hazards at Work
2. Assignment Sheet #2 - Floor Plan at Work
3. Assignment Sheet #3 - Word Find Puzzle
4. Assignment Sheet #4 - Demonstration of Proper Lifting and Moving Techniques
5. Assignment Sheet #5 - What's your F.A.I.Q. (First Aid I.Q.) When the Victim Can't Tell You What's Wrong?
6. Assignment Sheet #6 - What's Your F.A.I.Q. (First Aid I.Q.) On ... Shock?
7. Assignment Sheet #7 - What's Your F.A.I.Q. (First Aid I.Q.) On Heat Stroke and Heat Exhaustion?
8. Assignment Sheet #8 - What's Your F.A.I.Q. (First Aid I.Q.) On ... Drowning?
9. Assignment Sheet #9 - What's Your F.A.I.Q. (First Aid I.Q.) On ... Poisoning?
10. Assignment Sheet #10 - What's Your F.A.I.Q. (First Aid I.Q.) On ... Burns?
11. Assignment Sheet #11 - What's Your F.A.I.Q. (First Aid I.Q.) On ... Fractures?
12. Assignment Sheet #12 - What's Your F.A.I.Q. (First Aid I.Q.) On ... Heart Attacks?
13. Assignment Sheet #13 - What's Your F.A.I.Q. (First Aid I.Q.) On ... Wounds?

14. Assignment Sheet #14 - What's Your F.A.I.Q. (First Aid I.Q.) On ... Electrocution?

15. Assignment Sheet #15 - Evaluation of Your First Aid I.Q.

E. Handouts

1. Handout #1 - Lifting and Moving Techniques

F. Answers to assignment sheets

G. Test

H. Answers to Test

III. Unit References

A. Curriculum Guide for Health Occupations Education, Illinois Office of Education, Department of Adult, Vocational and Technical Education.

B. Minnesota Secondary Health Occupations Curriculum Guidelines, Division of Vocational-Technical Education, Minnesota Department of Education.

C. Health Occupations Education Units of Instruction Volume II, Occupational Curriculum Laboratory, East Texas State University. Commerce, Texas, 1979.

IV. Additional Resources:

A. Audiovisuals:

1. "Dealing With Problem People: The Disorderly Worker"
"Safety in the Chemical Laboratory"
"Six Murderous Beliefs"
"Your Health in the Community"
Coronet Instructional Films
65 East South Water Street
Chicago, Illinois 60601

2. Abundant material available from:
Arkansas Department of Health
4815 West Markham
Little Rock, AR 72201

3. "Emergency - Keep Your Cool!"
   "House of Accidents"
   "New Prescription for Life" (CPR)
   "In Case of Fire - Fire Drills and Fire Safety"
   "First Aid on the Spot"
   "How to Save a Choking Victim - The Heimlich Maneuver"
   "The Life You Save" (First Aid)
   Arkansas Department of Education
   Audio-Visual Service
   Little Rock, AR

4. OSHA Regulations for the Hospital
   P.821 A - "Overview of OSHA"
   P.821 B - "OSHA Regulations for the Hospital"
   Eye-Gate Pro-Tech Media
   146-01 Archer Avenue
   Jamaica, NY 11435

5. "Safety in Housekeeping"
   "How's Your Safety Profile"
   "How to Work all Day Without Getting Hurt"
   " ... do the Sick no Harm"
   "Patient Safety: From Thermometers to Wheelchairs"
   "The Hospital: A Place Where Accidents Never Happen?"
   "Protecting Yourself and Your Patient From Electrical Shock"
   "Hospital Fire Safety Procedures"
   "Hospital Fire Hazards"
   "Fire Extinguishing Equipment"
   Trainex Corporation
   P.O. Box 116
   Garden Grove, CA 92642

SAFETY AND EMERGENCY CARE
UNIT XIV

INFORMATION SHEET

I. Introduction

Safety means freedom from danger, risks, or injury. Health attendants are particularly concerned with safety. Not only are they interested in their own personal safety, and that of their co-workers, but they are responsible for the safety of patients entrusted to their care.

Health attendants should develop a safety attitude. An attitude is a mental pattern, or a way of reacting to a situation. Attitudes are learned, and can be changed by knowledge and experience. Thus, a safety attitude is a way of reacting to hazardous, or unsafe conditions, that will protect both you and your patient.

II. Causes of accidents

A. Individual behavior

1. Poor judgment--lack of ability to recognize or accept potential danger

2. Physical limitations--lack of physical ability to avoid or prevent danger

3. Lack of training--individual not adequately instructed, or experienced enough, to avoid accidents

B. Hazardous environment

1. Dangers cannot always be avoided because they exist everywhere.

2. Recognition and identification of hazards help to control them.

III. Health care institutions' liability

A. Moral

B. Legal

C. Financial

INFORMATION SHEET

IV. Twelve general rules of safety

A. Always report unsafe conditions.

B. Know and understand each particular job and responsibility.

C. Accept responsibility for removing any foreign material: water, blood, paper, flower petals, etc.

D. Walk, never run - especially in the hall and on stairs.
- Keep to the right
- Go single file
- Take one step at a time
- Use handrails

E. Watch out for swinging doors.
- Open door slowly
- Always use handle or pushplates

F. Remember that all practical jokes and acts of horseplay are prohibited.

G. Use equipment that is safe and in proper working order.
- Do not use defective or faulty equipment
- Check equipment to make sure it is in proper working order
- Report all defective equipment

H. Perform only those procedures for which you have been properly and adequately trained.

I. Report all incidents and injuries, however slight.

J. Wear proper, acceptable clothing for your particular job.

K. Use proper body mechanics to prevent injury when stooping, lifting, pulling, or reaching.

L. Know the health care institution's fire and disaster plans.
- Location and use of nearest fire alarm

INFORMATION SHEET

V. Occupational Safety and Health Act - 1970

   A. Federal legislation that assures safe and healthful working conditions for every person who works in this country. All employers must conform to these federal laws.

   B. Through OSHA, the Secretary of Labor can establish and enforce safety and health standards for all workers.

VI. Safety precautions in patient care

   A. Safety measures for bed patients

      1. Lower the bed before assisting patients out of bed. This helps the patient avoid falling.

      2. Do not leave bed cranks extended, bed wheels turned out, or footstools in the way.

      3. Be sure patient is aware of, and uses, hand rails in bathrooms to avoid slipping.

      4. Psychiatric patients may need especial security to protect themselves and other patients or personnel.

   B. Transporting patients in a wheelchair

      1. Push wheelchair from behind except when going in and out of elevators or down ramps.

      2. Fasten safety straps to hold patient securely in chair.

      3. Do not let the patient's clothing or bed covering drag on the floor.

      4. Always set the brake when the chair is still.

      5. Never leave a patient unattended in a wheel chair. Always notify person in charge when you have delivered a patient.

      6. Always park wheelchairs in a safe place where they will not interfere with traffic.

INFORMATION SHEET

C. Transporting patient on a stretcher

1. Strap patient onto stretcher with arms at side or folded against chest.

2. Cover patient, but do not allow cover to drag because it could become caught in stretcher wheels.

3. Stand at patient's head and push the stretcher.

4. Never move a stretcher at a fast pace.

5. Never leave a patient unattended on a stretcher until you have notified the person in charge.

6. Always set the brakes on a parked stretcher to avoid rolling.

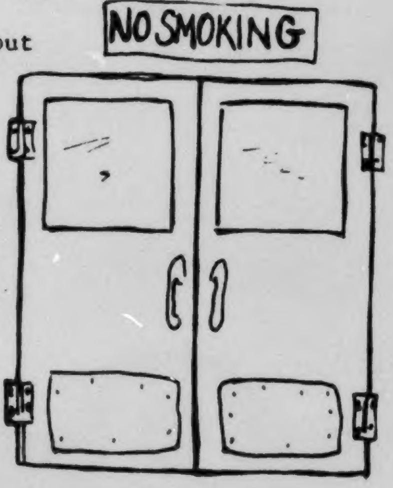
VII. Safety precautions in the use of oxygen

A. Oxygen itself does not burn, but it supports combustion.

B. Post a No Smoking sign on the patient's door.

C. Post a No Smoking sign on the oxygen cylinder or the oxygen piping system outlet.

D. Do not use any electrically operated equipment (heating pads, call signals, radios) at the bedside when oxygen is in use.



E. Silk, wool, or synthetic fabrics can cause sparks. The attendant and patient should wear cotton fabric and cotton bed linens should be used when the patient is receiving oxygen.

F. Flammable materials such as grease and oils must not come in contact with equipment used in administering oxygen (valves, hoses, cylinders). The attendant's hands must be free of grease and oil.

INFORMATION SHEET

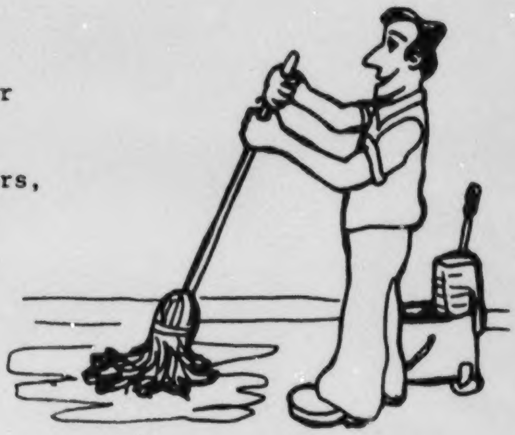
G. Oil, alcohol, or lotion must not be used when giving back rubs to patients receiving oxygen.

H. Do not permit the lighting of ritual candles at the bedside when oxygen is in use.

VIII. Safety practices in housekeeping in the medical facility

A. Wheel heavy, awkward cleaning equipment. Do not try to carry it.

B. Clean spills from floor immediately.

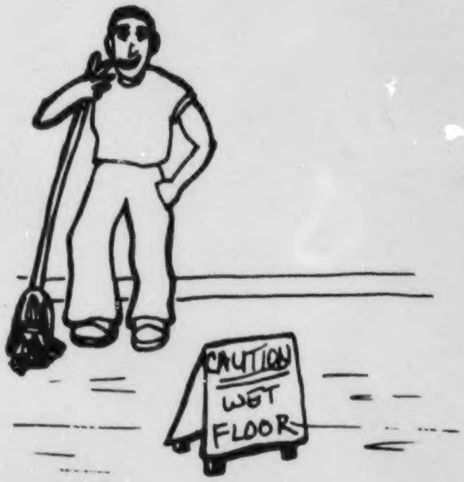


C. When mopping hall floors, place caution signs conspicuously to warn people of slippery floors.

D. Do not overwax floors or use scatter rugs.

E. Store equipment out of the way when not in use. Avoid clutter in the working area.

F. Check linens for pins before sending to the laundry.



G. Replace or repair frayed or worn electrical cords or plugs.

H. Replace burned out light bulbs at once.

INFORMATION SHEET

IX. Safety practices in the medical laboratory

- A. Be sure all equipment is in working condition prior to use.
    - 1. Avoid using broken glassware
    - 2. Do not use stretched or cracked tubing
- B. Carefully follow prescribed procedure in handling contaminated materials.
- C. In using a Bunsen burner, be sure tubing is short, intact, and securely fastened. The flame should be clean and blue.
- D. Never use mouth suction to pipette strong acids or bases. Use pipettes plugged with cotton when pipetting live cultures.
- E. Know location and how to use safety shower if one is available.
- F. The best protection is a healthy awareness of dangers present in chemicals and test materials.
- G. Handle any specimen from a patient (e.g., blood, urine, sputum, or feces) as though it were contaminated.

X. Safety practices for X-ray

- A. Exposure to radiation
    - 1. Skin, gonads, and blood forming organs are particularly sensitive to X-rays and should be protected.
    - 2. Any body tissue will be injured by overexposure to X-rays.
    - 3. Film badges should be worn by all roentgenological personnel to indicate amount of radiation being received.
    - 4. Protective lead gloves and aprons should be worn by X-ray personnel at appropriate times.
    - 5. Minimize radiation hazard to patients by avoiding "re-takes". Try to get correct picture the first time.

INFORMATION SHEET

XI. Safety practices in dental assisting

- A. Familiarize yourself with instructions accompanying pieces of equipment prior to use (as vibrators, model trimmers, and lathes).
- B. Be sure to use the proper instrument for the assigned task.
- C. Pass any instrument with handles first and the working point away from receiver.
- D. Dental (X-ray) personnel should never hold dental films in the patient's mouth during radiography.

XII. Safety measures for pharmacy

- A. Keep all medicines and poisons in a safe place.
- B. Label all containers.
- C. Do not leave filled bottles or other containers uncapped.
- D. Narcotics or any other drug with a potential for abuse must be kept in a locked case.

XIII. Types of fire

- A. Ordinary combustible
- B. Flammable liquid
- C. Electrical
- D. Combustible material

XIV. Three elements necessary for fire

- A. Heat
- B. Fuel
- C. Oxygen

XV. Major causes of fire

- A. Smoking and matches
- B. Misuse of electricity

INFORMATION SHEET

   C. Defects in heating systems

   D. Spontaneous ignition

   E. Improper rubbish disposal

XVI. Potential causes of fire in health care institutions

   A. Oxygen equipment

   B. Flammable liquids

   C. Anesthetic gases

   D. Flammable chemicals in laboratories

   E. Flammable liquids and chemicals in pharmacy

   F. Combustible materials in storage

   G. Cooking facilities

XVII. Types of fire extinguishers

   A. Dry chemical

   B. Carbon dioxide (CO_2)

   C. Pressurized water

   D. Soda-acid

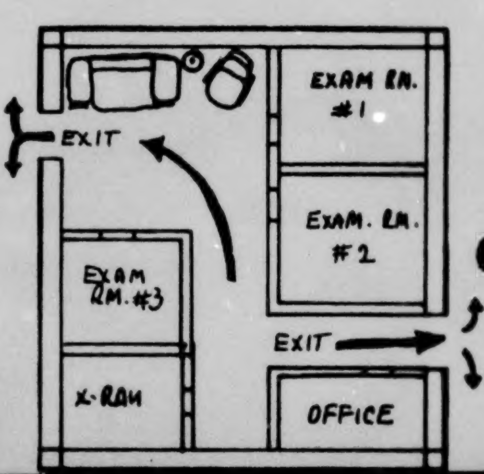
XVIII. Handling a fire emergency

   A. How to report a fire

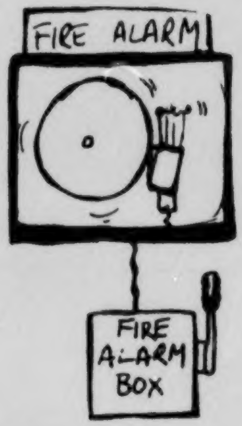
   B. Emergency plan of home, school, or institution

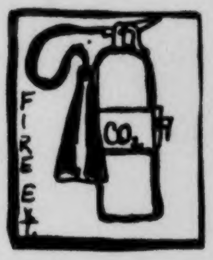
      1. Practice fire drills as outlined by the facility, but always take care to avoid disturbing patients.

      2. Know the floor plan of the entire facility, and of your particular work area.



INFORMATION SHEET





3. Know the exact location of exits, and the most efficient routes to the exits.

4. Location of fire alarms

5. Location of fire extinguishers

C. Fire emergency procedures in health care institutions

1. Pull nearest fire alarm

2. Notify switchboard or secretary of exact location and nature of fire

3. Assist clients to safety. Take special care to protect patients who have been given sedatives, are comatose, restrained, or otherwise helpless.

4. Follow emergency procedures of facility

5. Avoid panic

XIX. Color codes for health care hazards

A. Red - for fire alarm boxes

B. Yellow - for aisles to direct traffic flow

C. Orange - for alert

D. Green - for first aid equipment

E. Purple - to designate radiation equipment

F. Black and white - for stairways, refuse cans, food dispensing equipment

G. Blue - for caution

INFORMATION SHEET

XX. General safety reminders

A. Always identify patient prior to any procedures.

B. Avoid climbing when you must reach items stored on high shelf; use a safety ladder.

C. Avoid horseplay and practical jokes.

D. Report any unsafe condition or equipment that you observe.

E. Walk, never run; always look where you are going; take care at intersections.

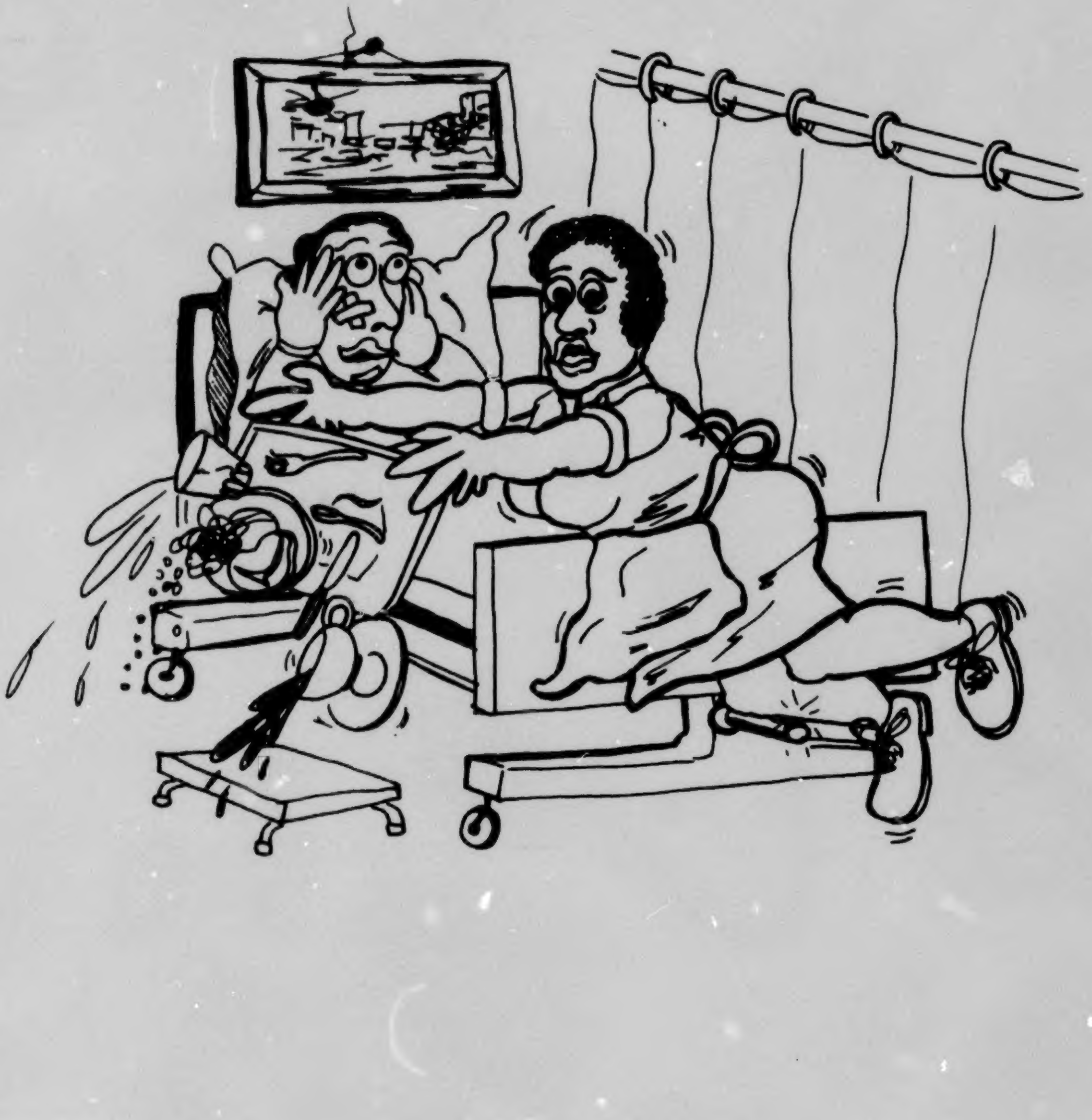
F. Open swinging doors cautiously and slowly.

G. Keep drawers and cabinet doors closed when not in use.

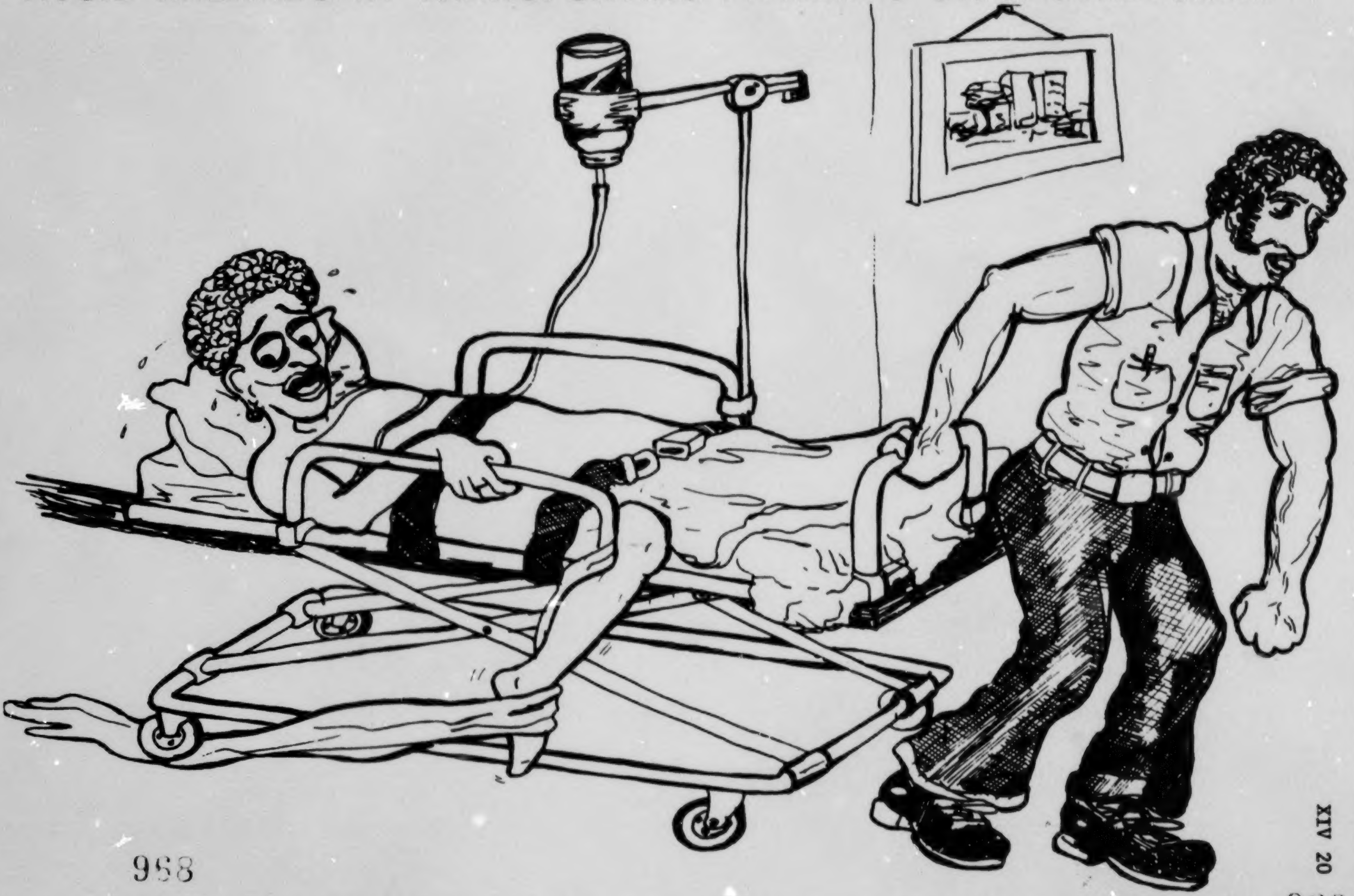
H. Remember that children require special attention and care to prevent accidents.

I. Think safety - develop a safety attitude.

DO NOT LEAVE BED CRANKS EXTENDED!



AVOID HAZARDS IN TRANSPORTING PATIENTS ON A STRETCHER!



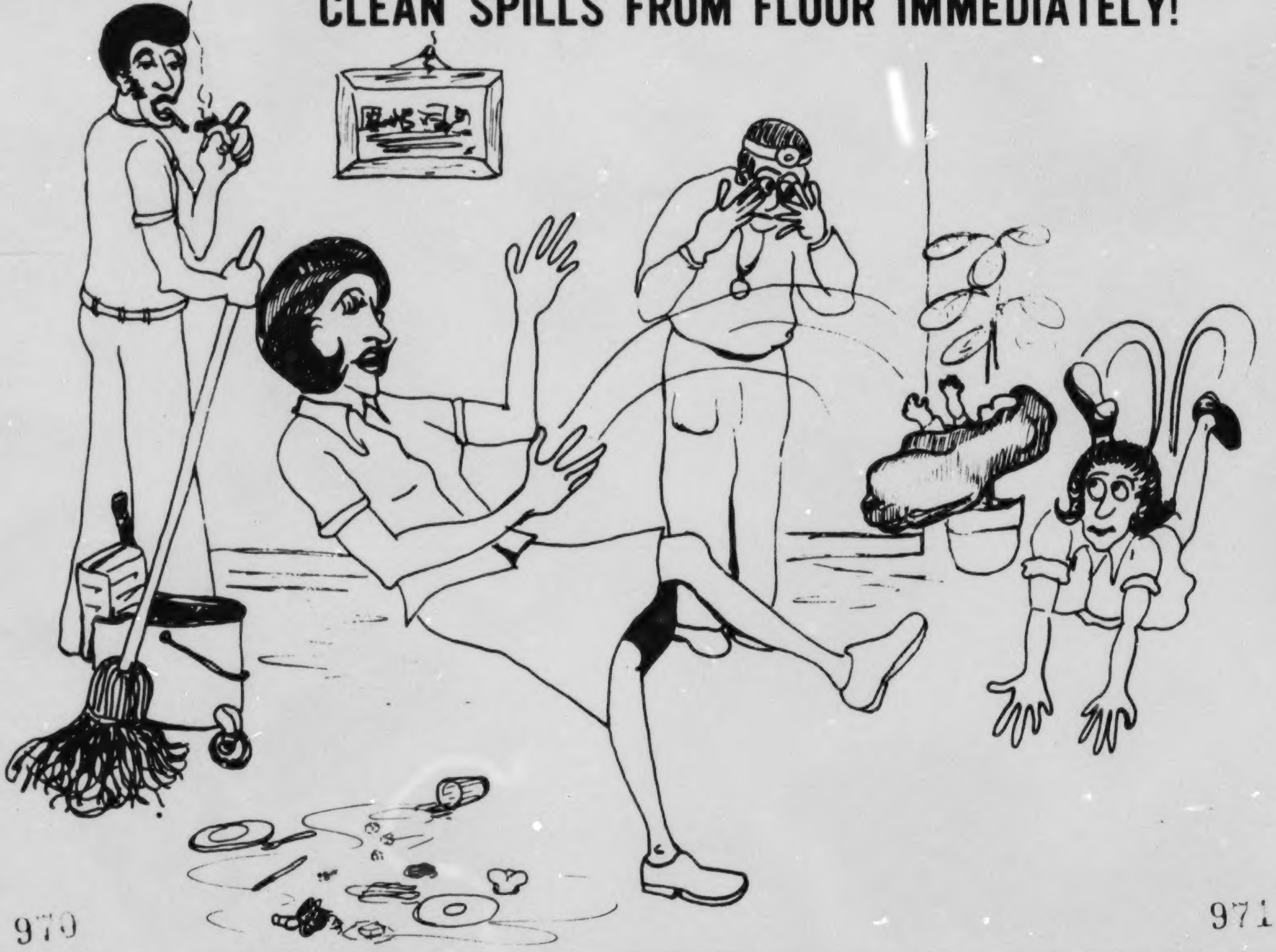
TM-2

968

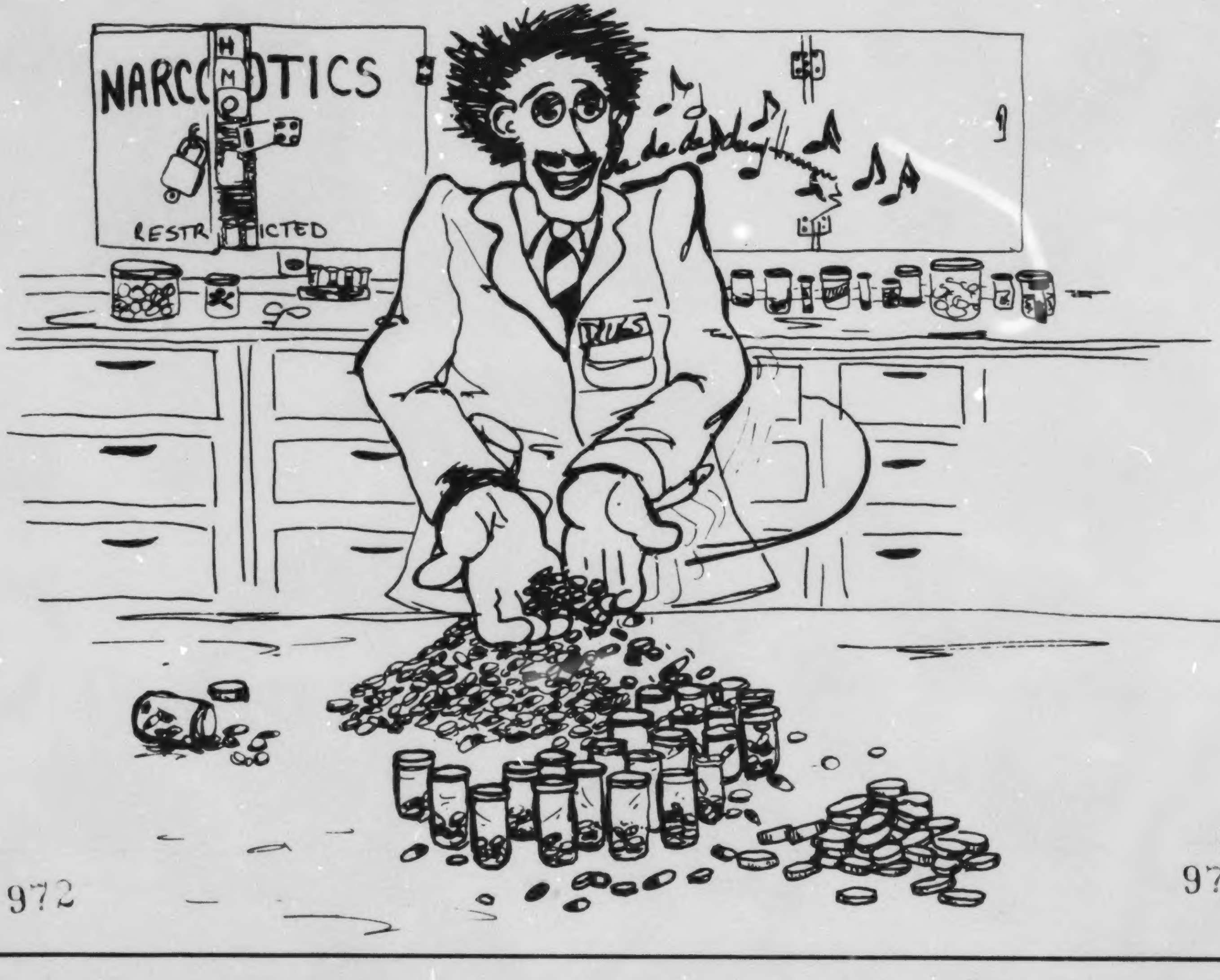
XIV 20

960

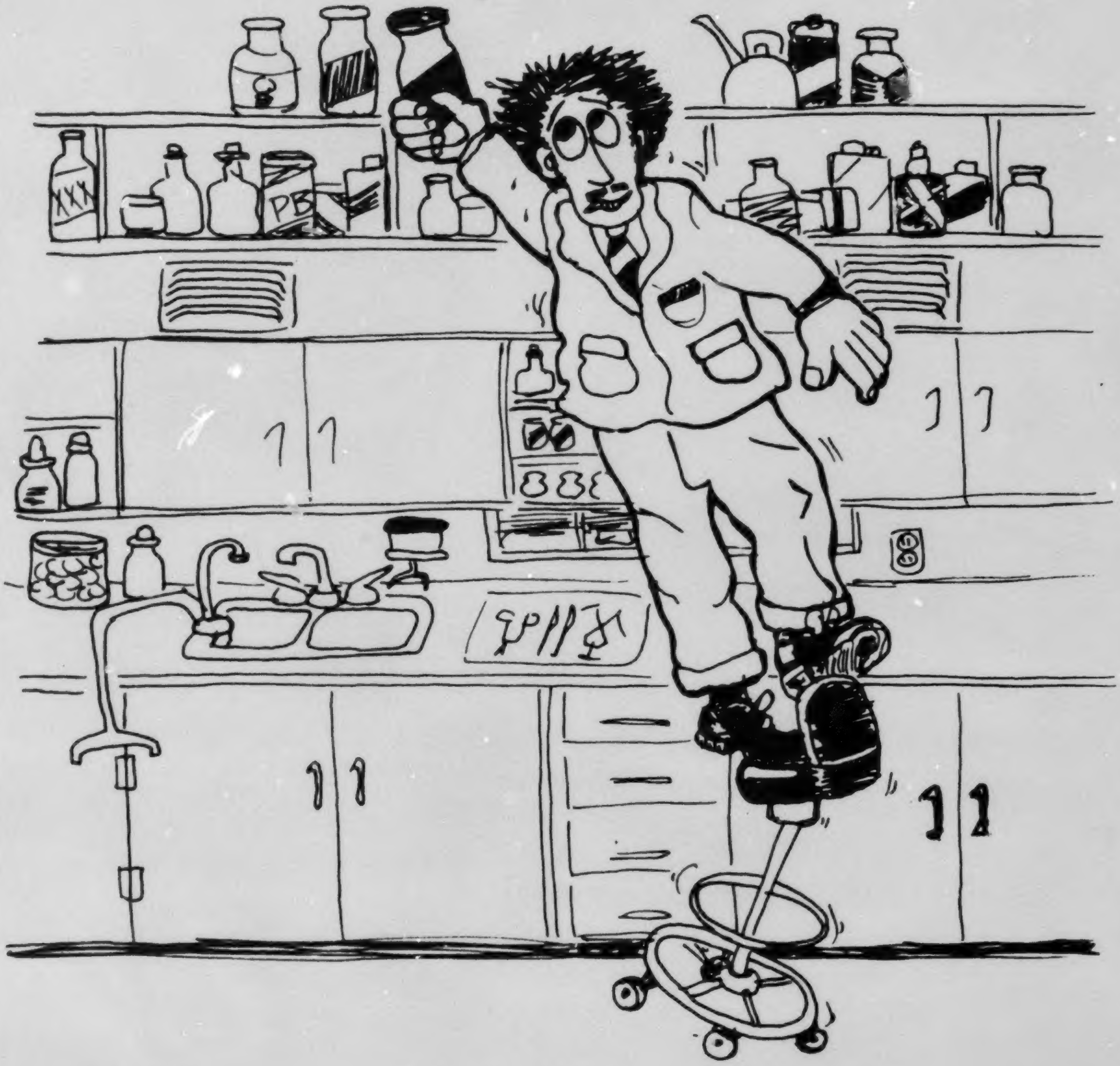
CLEAN SPILLS FROM FLOOR IMMEDIATELY!



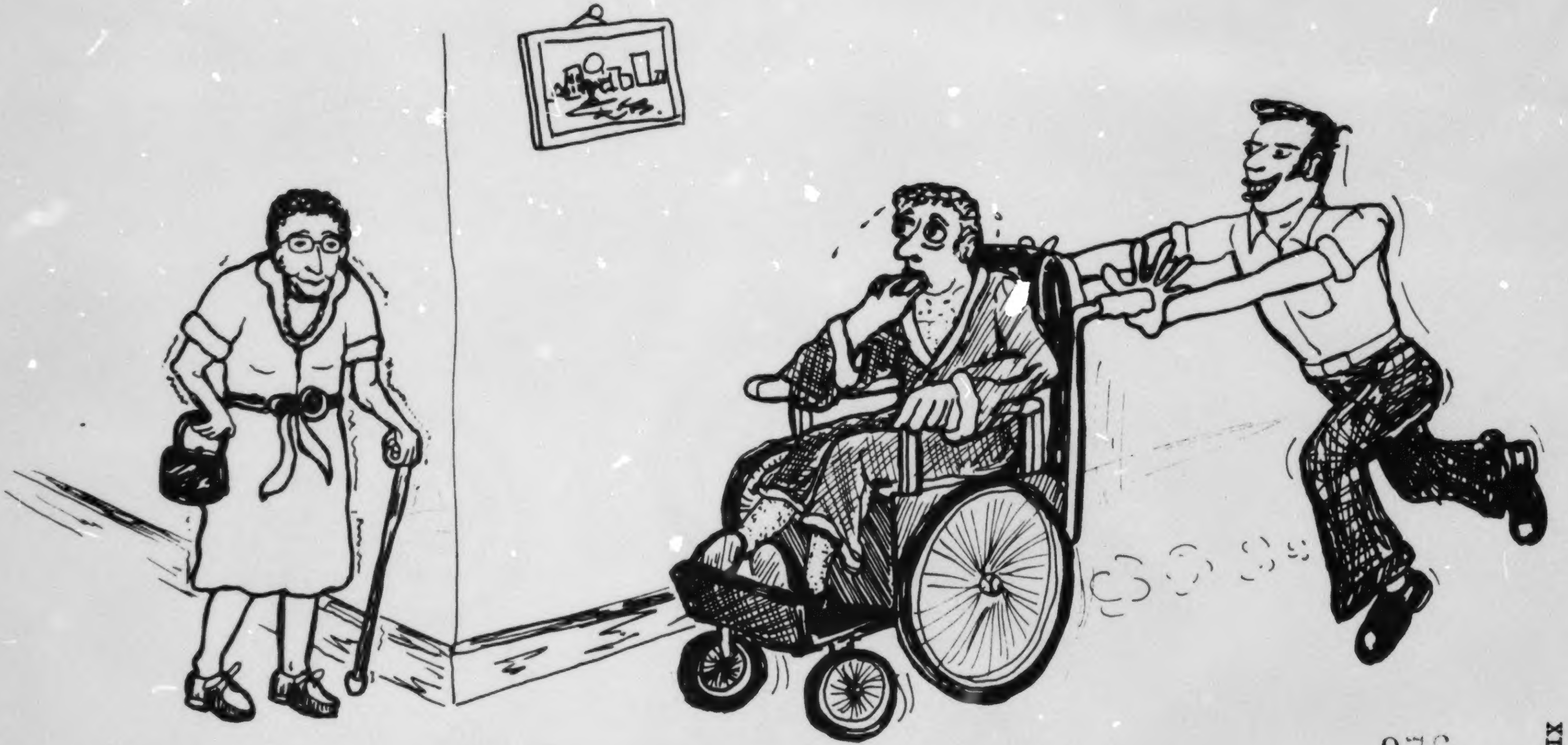
AVOID HAZARDS IN THE PHARMACY!


NARCOTICS
HMO
RESTRICTED
la de da dey Hmmm
DRUGS

DO NOT CLIMB TO REACH EQUIPMENT WITHOUT A SAFETY LADDER!



APPROACH INTERSECTIONS WITH CARE!



976

XIV 24

TM-6

975

SAFETY AND EMERGENCY CARE
UNIT XIV

ASSIGNMENT SHEET #1 - HAZARDS AT WORK

List any hazards you can find where you work, describe them, and tell how such hazards could be eliminated.

SAFETY AND EMERGENCY CARE
UNIT XIV

ASSIGNMENT SHEET #2 - FLOOR PLAN AT WORK

Sketch a floor plan of the place where you work. Show location of fire alarm, fire extinguisher, and exits. (If you work in a multi-level building, show route you would take to leave the building.)

SAFETY AND EMERGENCY CARE
UNIT XIV

ASSIGNMENT SHEET #3 --WORD FIND PUZZLE

Directions: The following words pertaining to safety can be found in the word find puzzle. They may be vertical, horizontal, or diagonal. Circle each word as you find it.

accident
alarm
attitude
brakes
caution
danger
extinguisher
flammable
handrail
hazard
instrument
judgment
limitation
OSHA
precaution
radiation
safety
stretcher
wheelchair

C	S	B	N	O	I	T	U	A	C	E	R	P
W	A	T	T	I	T	U	D	E	D	O	F	C
T	H	A	N	D	R	A	I	L	M	X	D	J
N	I	E	S	I	D	A	N	G	E	R	W	N
E	T	N	E	D	I	C	C	A	A	T	N	O
M	U	M	K	L	U	P	T	Z	A	N	O	I
U	B	R	A	X	C	L	A	F	T	E	I	T
R	D	A	R	U	A	H	S	O	S	M	T	A
T	E	L	B	A	M	M	A	L	F	G	A	T
S	S	A	F	E	T	Y	L	I	C	D	I	I
N	S	T	R	E	T	C	H	E	R	U	D	M
I	M	B	N	O	I	T	U	A	C	J	A	I
E	X	T	I	N	G	U	I	S	H	E	R	L

SAFETY AND EMERGENCY CARE
UNIT XIV

ASSIGNMENT SHEET #4 - DEMONSTRATION OF PROPER LIFTING AND MOVING TECHNIQUES

Use Handout on Lifting and Moving Techniques with this activity.

Have students demonstrate proper lifting and moving techniques. Evaluate or ask class to evaluate in terms of the following criteria:

- Use of even motion
- Body balance
- Distribution of load among many muscles
- Use of leg and arm muscles rather than back
- Kneeling for low-level lifts and moves
- Use of broad base

SAFETY AND EMERGENCY CARE
UNIT XIV

ASSIGNMENT SHEET #5

*WHAT'S YOUR F.A.I.Q.
(FIRST AID I.Q.)
WHEN THE VICTIM CAN'T TELL YOU WHAT'S WRONG?

For some reason, which you must try to discover, the victim is unconscious.

One of the most frustrating first aid emergencies is one in which you and the victim are alone, and the victim can't tell you what is wrong. Even if medical help is summoned, it will be important to find out what caused the unconscious state. In a way, it is the same problem a veterinarian faces--a voiceless, helpless, victim. How would you handle the following case of unconsciousness? See if you can select the correct first aid procedures and place them in the proper order.

You are in school later than usual because after-school gymnastic practice was long. When you put your coat on to leave, you suddenly remember you will need your math book to do some homework problems tonight. Your locker is two floors up, at the other end of the building. You begin the trip alone. After climbing the stairs, you start down the long dark hall. It seems strange to be able to hear your own footsteps in the usually crowded hallway. Just as you reach your locker, you catch a glimpse of something at the end of the hall. When you turn to look at it, you see what appears to be a blanket lying on the floor. You take the book from your locker, but again feel compelled to look toward the blanket. As your eyes adjust to the dim light, you see it is a person, lying very still. You hurry over and discover a boy. You ask him what's wrong, but he doesn't answer. Quickly, you switch on the hall light. The boy is lying on his back. His face is ashen white. As you take his pulse, you find it is rapid. His breathing is slow and shallow, and his skin is cold and sweaty. What will you do?

?

- Go for help
- Look for some form of medical identification
- Turn and victim on his side
- Shout and slap him gently to awaken him
- Sit him up and give him water
- Elevate his feet
- Cover the victim with your coat
- Prop up the victim's head

Your first concern is to keep the victim breathing since he might choke on his tongue if left in the present position. Therefore, you should:

1. *turn him on his side, assuming you see no evidence of neck or back injury.*

Before summoning help, it is important to determine what may have caused unconsciousness. An obvious solution might be to:

2. *check for a medical ID. Perhaps he is a diabetic, epileptic, or has an allergy or asthma that might explain his unconsciousness. You might also search for clues in the hallway such as pill bottles, evidence of a fall, or signs of violence.*

In this case, your victim is wearing a medical tag indicating he is a diabetic. His symptoms are those of insulin shock. Before leaving him:

3. *cover him to maintain his temperature while you go for help. Do not give him water because he is unconscious and may choke. Since he is now on his side, do not elevate his legs or head.*

If his breathing appears stable, you may:

4. *go for help, but return to him until help arrives.*

***From Current Health, April 1976 © 1976 by Curriculum Innovations, Inc. Reprinted by permission. Further reproduction prohibited.**

SAFETY AND EMERGENCY CARE
UNIT XIV

ASSIGNMENT SHEET #6

*WHAT'S YOUR F.A.I.Q. (FIRST AID I.Q.)

ON . . . SHOCK?

To test your first aid I.Q., read the following story. Then STOP and decide what you would do in that situation. Next, read the choices that follow the situation, select the ones you think are correct, and place them in the proper order. Last, check your first aid I.Q. by reading the solution. Did you react correctly?

Your grandfather has been complaining of repeated nosebleeds for about a week. When you get home from school, your grandfather calls to you from his bedroom in a weak voice. He has a severe nosebleed and has soaked a towel with blood. He is sitting in a chair. His skin is pale, cold, and moist. You take his pulse and it is 120 beats per minute and feels weak. He is breathing more rapidly than normal and his pupils are dilated. He has a history of high blood pressure. There is nobody else at home. What will you do?

?

- Place him on his back and elevate his feet
- Place him on his back and elevate his head turning it to one side
- Pinch the nostrils together and have him breathe through his mouth
- Call for help
- Have him blow his nose
- Apply warm compresses to his nose and face
- Apply cold compresses to his nose and face
- Cover him with a blanket
- Give him a drink of water

Your victim is suffering from at least two conditions--a severe nosebleed and hemorrhagic shock. Shock is a depressed state of many vital functions, and can result in death if not treated. It may be caused by bleeding, infection, pain, heart attacks, or many other serious conditions.

If he were not so weak, you would be best to keep him sitting up and leaning forward to prevent choking. But since he is likely to faint at any time, he could fall from the chair and be injured. The normal position for the person in shock is lying flat or feet elevated, but in your grandfather's condition, that would encourage the bleeding, and he might choke on the blood.

1. *Therefore, have him lie down, but elevate his head and turn it to the side. If he loses consciousness or chokes, he should be turned on his side so fluids can drain from his mouth and nose.*

2. *In such a severe nosebleed, it is doubtful that pinching the nostrils will help, but it should be tried first.*

3. *Cold compresses over the nose and face may help. Warm compresses would increase the bleeding and should never be used.*

4. *Covering him with a light blanket would help maintain his body temperature. Unless medical help will be delayed, water or other fluids are not necessary and would only complicate the situation.*

5. *Now, if you feel his breathing is satisfactory, you may summon help. This case certainly warrants calling an ambulance--the shock alone could be fatal. After making the call, be sure to return to your grandfather. If the shock worsens, he could stop breathing, choke, or become unconscious. In any case, he will need you there.*

FIRST AID SKILL TIP

In the preceding incident, the victim's pulse rate was taken. The pulse rate is often taken as an indication of a person's circulatory functioning. At rest, an adult male's pulse rate is usually 54-70 beats per minute. An adult female's is 75-80 per minute, and a young child's is 82-180 per minute. This rate often increases when there is a fever. In addition, a pulse may feel strong, weak, or irregular.

There are many places on the body where a pulse may be felt, but the two most commonly used are the wrist and the neck.

When taking a pulse, always use your fingers rather than your thumb, because your thumb has a pulse of its own, which would cause confusion in trying to feel only the patient's pulse. The wrist pulse is located on the inside of the wrist just below the base of the thumb. Three fingers should be pressed gently over this point and a pulse should be felt.

However, when a person is in shock, like the man in our story, the pulse is often too weak to feel in the small artery in the wrist. Then the first aider should try to find the carotid pulse in the neck. To find it (on yourself) look straight ahead. Take two or three fingers of your right hand and place them on the left side of your neck just below your jawbone and to one side of your Adam's apple. You should feel a strong pulse. If you do not, move your fingers forward or back until you locate it. You will notice this pulse is stronger and easier to feel than the wrist pulse.

If you have other injuries to care for, you may count pulse beats for 30 seconds and multiply by two instead of counting a full minute. Any abnormalities in pulse rate or strength should be mentioned to the doctor or other medical person summoned. For example, the pulse of a person in shock is often rapid and faint because shock is a depressed state of many body functions and could be life threatening if untreated. The pulse alone may tell you if shock is present.

*From Current Health, April 1976 © 1976 by Curriculum Innovations, Inc. Reprinted by permission. Further reproduction prohibited.

SAFETY AND EMERGENCY CARE
UNIT XIV

ASSIGNMENT SHEET #7

*WHAT'S YOUR F.A.I.Q. (FIRST AID I.Q.)
ON HEAT STROKE AND HEAT EXHAUSTION?

Summer is coming and those of you who live in the northern part of our country will be glad to see sun instead of snow. We'll probably all spend more time outside doing "fun in the sun" type things. Sunlight, in moderation, is good for all of us. However, there is a subtle danger. Too much sun or too much heat can be a killer! Excessive heat can affect the body in many ways. See if you can tell how serious the following situations are and what you should do to render first aid.

You and a friend have decided to play 18 holes of golf. You made the arrangements over a week ago, so the predicted 100 degree temperature isn't going to stop either of you. Meeting at the course at 1 p.m., you quickly walk up to the first tee and whack out a beautiful drive. Both of you play well on the first six holes, despite the rising temperature. By the 9th hole you are perspiring profusely but your partner isn't. You marvel at his ability to "keep his cool" in this weather. On the 11th hole, neither of you can wait to get to the drinking fountain and the cool drink is a welcome respite. By the 12th hole, the farthest from the clubhouse, you notice your friend is lagging behind. You tease him, but he doesn't seem to feel well enough to tease back. His face is flushed but he isn't perspiring. The 14th hole is a "water hole." You both tee off and make it over the inviting pond. As you walk out to your ball, you turn to say something to your partner and find him face down on the fairway. You rush over to him and discover he is unconscious. His skin feels very hot and dry. His pulse is rapid and strong, but he does not respond. What will you do? What do you suspect is wrong with him?

?
- Cover him with a jacket
- Slap him to waken him
- Turn him over and check his breathing
- Loosen his clothing
- Try to get him into the shade
- Soak a towel in the pond and begin sponging him
- Place him in the pond to cool him
- Give him something cold to drink
- Send another golfer for help
- Turn him on his side

If you said your victim had heat stroke, you were correct. This is the most severe of the "heat illnesses," and actually can cause death. The clues that distinguished this from simple heat exhaustion were the hot dry skin with a lack of perspiration. This lack of perspiration is one reason his temperature may be as high as 106 degrees. The longer it stays that high, the more dangerous his condition. Your first move should be to:

1. *turn him over and make sure he is breathing.*

Since he is unconscious, it would be wise to:

2. *place him on his side.*

Now it is crucial to get that temperature down. If shade is nearby and you feel you can move him you could:

3. *try to pull him to shade.*

If this is not possible, leave him on his side while you:

4. *soak a towel in cold water and begin sponging him.*

To do this you may want to:

5. *loosen his clothing and remove his shirt. Because he is unconscious, it would be dangerous to place him in the pond. You should never give an unconscious person anything to drink.*

Continue sponging him while you:

6. *send another golfer for help*

This is serious enough to warrant calling an ambulance, so be sure to tell your "helper" to call one. Continue to monitor his breathing until help arrives.

Mrs. Green, the elderly woman sitting in front of you, always attends church. Rain, shine, heat or cold, she's there every Sunday. This is rather amazing considering she is 80 years old and walks to and from church. Today, as you see the small beads of perspiration run down her neck, you are particularly amazed at her fortitude. The thermometer was climbing to 95 degrees when you left home and in the sultry church you are certain the temperature must be over 100 degrees. As the congregation stands to sing a hymn, Mrs. Green starts to rise, then suddenly sits down and falls forward. She slides off the pew onto the floor and lies motionless. As you move toward her, you see her skin is pale. When you reach her, she begins to wake up and says she feels weak. She is perspiring heavily and says her head hurts. What is wrong and what will you do?

?
- Have her sit up
- Give her 1/2 glass of salt water to drink every 15 minutes for about an hour
- Have her remain lying down and elevate her feet 8-12 inches
- Apply cool wet cloths
- See that she is taken home by car or sees a doctor
- Get someone to help her into a tub of cold water at a nearby house
- Call an ambulance
- Take her to an air conditioned room

This probably is a case of heat exhaustion. The fact that her skin is cold and she is perspiring probably eliminates heat stroke.

You should:

1. *Keep her lying down until she is fully conscious.*
2. *Elevating her feet may help her regain consciousness.*
3. *Get her some salt water to drink if she is not nauseated.*
4. *Apply cold cloths and fan her.*
5. *When she seems conscious enough, you can try to move her to an air conditioned room. She should not be permitted to walk home.*

If she does not recover within a short time, a doctor may be needed. Usually heat exhaustion does not require hospitalization, but her advanced age may warrant it. Rapid cooling of the body is not necessary because victims of heat exhaustion usually do not run high fevers.

Always respect the sun and high temperatures. Over-exertion in hot weather is hard on anybody, regardless of age. Try to avoid heavy outdoor activity when the thermometer climbs above 90 degrees. Cover your head, shade your face, and keep your "fun in the sun" safe and sensible.

*From Current Health, April 1976 © 1976 by Curriculum Innovations, Inc. Reprinted by permission. Further reproduction prohibited.

SAFETY AND EMERGENCY CARE
UNIT XIV

ASSIGNMENT SHEET #8

*WHAT'S YOUR F.A.I.Q.

ON... DROWNING?

The following story is designed to test your F.A.I.Q. on drowning. When you finish reading the story, STOP and decide, step by step, what you would do if you were involved in the situation described. Then read the choices that follow, select the ones you think are correct, and place them in the proper order. Last, check yourself by reading the correct procedure. Did you save a life?

It's your final fling at the end of summer. You and your family are staying in a cabin on a beautiful lake. Your dad has rented a motor boat and skis so that you and your younger brother can water ski. In 3 days both of you have become fairly proficient at the sport. On this particular afternoon, you are sitting on the dock watching while your father pulls your brother on skis. Your dad signals that he is going to swing past the dock and drop your brother off. As your brother approaches shore, a floating branch is suddenly washed in front of him. When his skis hit the branch, he flips in the air and lands stomach down on one of the skis. As he lands his head whips back. At first you think he is all right, but then you lose sight of him. As you stand up, you see he is floating face down in waist-deep water, not moving. *What will you do, assuming you find he is not breathing?*

? 1. Wait for your father to come back and pull him into the boat.
2. Run into the water and turn him over.
3. Pull him to shore.
4. Start mouth-to-mouth resuscitation in the water.
5. Press on his abdomen to expel water.
6. Clear his mouth.
7. Tilt his head back.
8. Jut his jaw forward.
9. Pinch his nose shut.
10. Use the back-pressure arm-lift method of respiration.
11. Make a seal with your mouth and blow.
12. Listen for an exchange of air and continue until he breathes on his own.
13. Drag him up onto the shore and go for help.
14. Place him on a board to remove him from the water.
15. Treat for shock.

In this emergency you are really dealing with 2 problems--drowning and injury to the neck or the back. Obviously, the most immediate problem is that your brother is not breathing, but haste in moving him could result in serious injury or even death if his neck is broken or his back is injured.

Therefore, your actions would be:

1. *Go into the water to him, since he can't come to you.*
2. *Turn him over gently by sandwiching him between your arms, and check to see if he starts breathing. If he does not but his heart is beating...*
3. *Clear his mouth in preparation for giving him mouth-to-mouth resuscitation while he is in the water. Do not wait until you get him to land because you will not be removing him from the water immediately. Seconds count when someone is not breathing.*
4. *While still in the water, open his airway by jutting his jaw rather than tilting his head back. Tilting his head could cause further damage or even death if he does have a neck injury.*
5. *Pinch his nose shut.*
6. *Make a seal with your mouth and blow into his.*
7. *Listen for an exchange of air and continue until he breathes on his own. It should not be necessary to press on the abdomen to expel water as there probably isn't any in his lungs or stomach yet anyway.*
8. *When you reach shore, do not remove him from the water until you have a solid object to place under him, such as a spine board. This will help to stabilize his head and neck. You may continue mouth-to-mouth resuscitation while he is in the water.*
9. *Once he has been removed from the water on a spine board, stabilize his head with towels top, bottom, and on either side, and...*
10. *Treat for shock by keeping victim warm.*

Improper handling in a case like this one could cost a life or possibly result in paralysis. It pays to know what to do and how to do it!

*From Current Health, April 1976 © 1976 by Curriculum Innovations, Inc. Reprinted by permission. Further reproduction prohibited.

SAFETY AND EMERGENCY CARE
UNIT XIV

ASSIGNMENT SHEET #9

*WHAT'S YOUR F.A.I.Q.
(FIRST AID I.Q.)
ON... POISONING?

Question: *What do the following things have in common? Suntan oil, red and orange crayons, lighter fluid, detergent, and toilet bowl cleaners?*

Answer: *They are just a few of the quarter million household products capable of causing poisoning if taken by mouth.*

Many of the victims of poisoning can be saved if family members or friends know what to do and act quickly. This month, we will test your knowledge of poison treatments in the following cases.

Read each case and decide what you would do. Then read the choices following, select the actions you feel are correct, and place them in the proper order. Finally, check your answers with ours. Did you save a life?

CASE A

You and a friend are working in his basement on a project for school. His parents are not home, and your friend is supposed to be watching his little sister, who is upstairs playing in the kitchen. You have been working for about half an hour when you hear his 4-year-old sister screaming. Both of you rush upstairs and find her sitting in the middle of the kitchen floor surrounded by containers of cleaning products from under the kitchen sink. You notice her mouth is red and looks burned. She has white crystals all over her hands which look like some type of soap or detergent. She says she can't remember which container she ate from but she thinks she swallowed quite a bit. What whould you do?

?

- Make her vomit
- Call a hospital or poison center
- Give her vinegar or lemon juice to drink
- Give her water or milk to drink
- Read labels from likely containers and follow directions
- Give her milk of magnesia to drink
- Maintain an open airway
- Both leave to go find help
- Cover her with a blanket

Answer:

1. *Have your friend call a hospital or poison control center for help. When he calls, he should give the following information:*
    - *a. What poison you suspect she took.*
    - *b. How much was taken.*
    - *c. Weight and age of the girl.*
2. *While he is calling you should be maintaining an open airway and making sure she can breathe. Keep her warm.*
3. *Give the child water or milk to dilute the poison but do not cause vomiting. This was a caustic (burning) poison. If it burned going down (burns around the mouth indicate this) it will burn coming up.*
4. *Attempt to find the container. If you do identify it, read for directions or contents.*
5. *If you discover the poison was an acid, give her milk of magnesia and water. If you discover it was an alkali, give her vinegar or lemon juice with water.*
6. *Follow with milk, olive oil, or egg white to coat the lining of the digestive tract. Be sure your friend tells the hospital or poison center what poison you suspect. Follow any instructions the hospital gives. Their instructions should override any others and they will probably arrange transportation to the hospital for your victim. Take the container along.*

CASE B

Steve had wanted a date with Cindy for a long time, and she had finally agreed to go to a rock concert with him. The evening of the concert, Steve realizes he won't have enough money to go out for something to eat after the concert if he buys gas, and his car's tank is low. No one is at home, so he decides to "borrow" some gas from his father's car. With a siphon, one end in his mouth, the other in his dad's gas tank, he draws out a small amount of gasoline and little-by-little fills a can with it. He pours the can full of gas into his own tank, and goes into the house to change clothes.

While changing clothes, Steve begins to feel ill. Awhile later, his brother Tom, returning from a baseball game, is startled to find his brother unconscious on the floor. Tom thinks he smells gasoline on Steve's breath. What should Tom do?

?
- Give him water to dilute the poison
- Check to see if he is breathing
- Clear his airway and turn him on his side
- Cause him to vomit up the poison
- Give artificial respiration
- Go for help
- Cover him with your coat

Answer:

1. *The first thing Tom should do is check to see if he is breathing. If he is not, his tongue might be blocking his airway, in which case Tom should:*

2. *Position him on his side and clear the airway. Cover him with a blanket.*

3. *If he still does not start breathing, begin giving him mouth-to-mouth resuscitation and continue until he breathes on his own. At the same time, check for a pulse. Do not give an unconscious person fluids and do not induce vomiting. This could kill him.*

4. *When breathing begins spontaneously, Tom may go for help. But he musn't be gone long: Steve could stop breathing again.*

*From Current Health, April 1976 © 1976 by Curriculum Innovations, Inc. Reprinted by permission. Further reproduction prohibited.

SAFETY AND EMERGENCY CARE
UNIT XIV

ASSIGNMENT SHEET #10

*WHAT'S YOUR F.A.I.Q.
(FIRST AID I.Q.)
ON... BURNS?

To test your first aid I.Q., read the following story. Then STOP and decide what you would do in that situation. Now read the choices that follow the situation, select the ones you feel are correct, and place them in the proper order. Last, check your first aid I.Q. by reading the solution. Did you react correctly?

Although babysitting is not your idea of a great evening, babysitting for little Jill Brown is less difficult than for other 4-year-olds. She is usually cooperative and cute, although lately she has become extremely inquisitive. To occupy her time, you switch on the TV and both of you sit on the couch to watch a program. After a few minutes Jill asks for some juice. You leave her on the couch and go to the kitchen to get her a drink. While you are gone, Jill discovers a shiny matchbox on the coffee table. She has seen her mother strike matches many times when lighting cigarettes so Jill decides to play "grown-up" and strike one too. Suddenly, you hear her scream. You rush into the living room and see that she has set the matchbox on fire and dropped it onto the couch. Her right hand and arm are burned. The skin is red, wet looking and blistered. She is screaming with pain as the matchbox burns itself out on the cushion. You are alone with her in the house--you must react!

STOP!

? 1. Apply cold water to the skin for 5 minutes
2. Place a dressing over the skin
3. Wash the skin with soap and water and blot dry
4. Cover the area with cotton
5. Immerse the arm and hand in cold water for 1-2 hours or until help comes
6. Apply cloths wrung out in ice water
7. Smear the area with butter
8. Blot dry gently
9. Apply burn ointment
10. Elevate the arm and hand
11. Have her lie down

In this emergency you have 3 major objectives: First to relieve the pain; second to prevent infection or contamination; third to treat for shock, since it almost always develops in severe burns. The blisters and wet appearance signal that you are dealing with at least a second degree burn, so 5 minutes of soaking isn't going to be enough.

Your first task is to stop that pain! To do this:

1. *Immerse the burned part in cold water and don't remove it for 1-2 hours or until help comes. This should give almost instant relief and give you a chance to call for help. There is a chance that the child will pass out, so it would be best to keep her in a sitting or a lying position and bring the water to her in a pan.*
2. *Have Jill lie down.*
3. *After soaking the burn, you may then wring out clean cloths in ice water and apply them to the burned area. This will continue to relieve the pain. Be careful not to break blisters, rub the skin, or wash it. Do not apply any substance such as butter or ointment. There are 2 major reasons for this: butter will sting because it usually contains salt, and any substance you put on will have to be removed by the doctor, and that will hurt. Do not apply cotton--it will stick.*
4. *Elevate the arm and await help.*
5. *Treat for shock by having Jill remain in a prone position, cover her and elevate her feet, particularly if she becomes pale or loses consciousness. Also, watch her breathing to be sure she does not choke.*

It's too bad Jill's parents didn't know that over 25% of all fires and resulting burns are due to matches or smoking. Hopefully, both you and Jill's parents will now keep matches and lighters out of Jill's reach. Since this was only a story, perhaps you can use it to prevent a similar tragedy in your home. Do you have little brothers or sisters? Are matches or lighters out of their reach? Maybe now is the time to check!

*From Current Health, April 1976 © 1976 by Curriculum Innovations, Inc. Reprinted by permission. Further reproduction prohibited.

SAFETY AND EMERGENCY CARE
UNIT XIV

ASSIGNMENT SHEET #11

*WHAT'S YOUR F.A.I.Q. (FIRST AID I.Q.) ON... FRACTURES?

Auto accidents are probably the major cause of fractures (broken bones). Following close behind, though, are accidents at home. Often, after the incident, the victim with hindsight realizes that maybe it wasn't so smart to attempt to change that light bulb in the ceiling fixture while standing on a rocking chair. Or to chase the dog down the street wearing floppy bedroom slippers. Or to leave those school books and that baseball on the stairs. But whatever the cause, falls can be, and often are, serious. Knowledgeable first aid may even save a life! Following is a situation involving a fracture. Can you select the proper first aid?

Your mother had been working in the kitchen all morning preparing Christmas dinner. You had helped for awhile, but she hurried you out of the kitchen while she prepared the stuffing. You go into the living room to watch TV, unaware of the fact that your mother had decided to use a spice she seldom used. In fact, it was stored in the top cabinet out of her reach. Wanting to save time, she decided to stand on your little sister's wagon, which was "parked" next to the kitchen door. As your mother stepped onto the wagon, it began to roll and she lost her balance. You hear a clatter and thud as your mother falls to the floor. When you rush into the kitchen, she is lying on her side. Her left arm is pinned under her and she is obviously in pain. She begins to sit up as you rush into the kitchen. *What will you do?*

?
- Have her sit up and place her head between her knees to prevent fainting.
- Have her stay in a lying down position and ask her where she hurts.
- Ask her to try to move her left arm to see if it is broken.
- Look for symptoms of fracture anywhere that hurts.
- Make sure she is breathing adequately, and if not, give artificial respiration.
- Caution her to not move her arm.
- Seek help in getting her to a doctor.
- Place support on either side of the suspected broken arm (splint).
- Ask whether she has pain in her neck or back.

1. *The very first thing to have done should have been to convince her to lie still, in as comfortable a position as possible.*

2. *Make sure she is breathing adequately.*

3. *Ask her where the pain is and if she has any pain in her neck or back. If she does, do not move her until an ambulance comes. UNDER NO CIRCUMSTANCES SHOULD YOU ASK HER TO MOVE HER ARM OR ANY OTHER PART OF HER BODY. This could make matters a lot worse.*

4. *Attempt to immobilize any parts that hurt. In the case of her arm, support could be applied to the arm in the form of a rolled-up newspaper or wooden splint.*

5. *Seek help in transporting her to a hospital for an X-ray (the best way to tell if something is broken). Cover her to maintain her temperature.*

*From Current Health, April 1976 © 1976 by Curriculum Innovations, Inc. Reprinted by permission. Further reproduction prohibited.

SAFETY AND EMERGENCY CARE
UNIT XIV

ASSIGNMENT SHEET #12

*WHAT'S YOUR F.A.I.Q.
(FIRST AID I.Q.)
ON... HEART ATTACKS?

Below you will find an account of a situation requiring first aid. To test your First Aid I.Q., read the story and imagine you are really involved. After the story you will find a number of possible procedures, some correct, some incorrect. Try to choose the correct ones and place them in the proper order. Then check yourself by reading the solution that follows.

A neighbor of yours has kindly volunteered to drive you to a rehearsal at school. He said he didn't mind "filling in" for your parents, who were at work. You meet him at his car and climb into the passenger side. He backs the car slowly into the street and proceeds toward school. After a block or so, you become aware of the driver's breathing, which is louder than it was before, and irregular. You glance at him and notice he is perspiring heavily and his face is white. You question him:

"Mr. Thomas, are you OK?"

"I...I have this pressure in my chest. I guess it's just indigestion."

He tries to appear relaxed, but you can tell he still is in pain as he squirms in his seat.

"Why don't you pull over and I'll call for help?"

"Nonsense. It'll go away in a few minutes."

"Does it hurt anyplace else?"

"Just my neck and jaw, but not bad."

Suddenly, as he approaches a stop sign, his face goes blank. His eyes stare, and he doesn't move to apply the brake. His hands drop to his lap, his mouth falls open, and he becomes unconscious. He slumps in the seat, head back. *What will you do?*

?
- Drive him to a hospital
- Check his pulse
- Turn off ignition key and guide car to a stop
- Tilt his head back
- If no pulse, give CPR
- Go call for help
- Check his breathing
- Send someone to get help
- If no breathing, give artificial respiration
- Get him out of the car

Your victim has many signs indicating he is suffering from a heart attack. A pressure or pain behind the breastbone, difficult breathing, pain radiating into the neck, jaw, arms, and back, and unconsciousness all are possible symptoms of a heart attack or blockage of a vessel that supplies the heart muscle with blood. Since treatment for a heart attack is complicated and requires a lot of equipment, your primary function is to keep both of you alive until help can arrive. Consequently, your first action should be:

1. *Stop the car by stepping on the brake or removing the ignition key, then guide the car to a stop.*
2. *Check to see if he is breathing. If he is breathing with difficulty, prop up his head and shoulders.*
3. *If he is not breathing, tilt his head back to open his airway. If he does not begin breathing, you should:*
4. *Begin mouth-to-mouth resuscitation and:*
5. *Send someone to get help and to bring oxygen. (If no one else is in the car, you may have to sound the horn until you attract attention.) After the victim has started breathing on his own:*
6. *Check for a pulse in the neck. If there is a pulse, but the victim still is not breathing on his own, continue mouth-to-mouth resuscitation. If there is no pulse AND no breathing:*
7. *Get the victim out of the car onto a hard surface and:*
8. *Begin CPR (cardiopulmonary resuscitation), if you are trained to do so. Continue these life-support measures until help arrives or until the victim's pulse and respiration return.*

You probably have noticed that the very life of this victim could depend upon your knowing two vital skills: mouth-to-mouth resuscitation and CPR. Many people know how to do mouth-to-mouth resuscitation, and have saved lives with the knowledge, but CPR is a relative newcomer to first aid skills. The American Heart Association has noted that about 650,000 Americans will die of heart attacks this year, and one-third of them die before they reach the hospital. Many of these deaths could be prevented if people knew the early warning symptoms and CPR. Consequently, the Heart Association has set as a goal the training of one out of every five Americans to give CPR. A class lasting approximately three hours may be offered in a hospital, clinic, or school near you this year. Consider devoting three hours of your time to learning how to save the life of a heart attack victim.

*From Current Health, April 1976 © 1976 by Curriculum Innovations, Inc. Reprinted by permission. Further reproduction prohibited.

SAFETY AND EMERGENCY CARE
UNIT XIV

ASSIGNMENT SHEET #13

*WHAT'S YOUR F.A.I.Q. (FIRST AID I.Q.) ON... WOUNDS?

The following stories are designed to test your F.A.I.Q. on wounds. When you finish reading each story, STOP and decide, step by step, what you would do if you were involved in the situations. Then, read the choices that follow, select the ones you think are correct, and place them in the proper order. Last, check yourself by reading the correct procedure. Did you save a life?

Case 1:

Your mother had been pestering your dad about sharpening the kitchen knives. Finally, he finds time to take out the small hand sharpener and prepares to do the job. To operate this sharpener, one must hold it in one hand and pull the knife through with the other hand. He begins with the largest butcher knife, and you glance up just in time to see the sharpener slip. The knife slides out of the sharpener and slices across your father's hand at the base of his thumb. The motion is so fast, the knife even continues across his wrist. The bleeding is immediately severe, spurting bright red from both incisions. Your father becomes pale and quickly sits down on a kitchen chair. You and he are home alone. *WHAT WILL YOU DO?*

?
- Apply pressure above his wrist
- Elevate his arm
- Run the cuts under cold water
- Apply direct pressure over the wound with a dressing if available
- Wash the wounds
- Apply an antiseptic
- Apply a tourniquet
- Remove the dressing if it becomes clotted with blood
- If bleeding continues, apply pressure to the supplying vessel on the inside of his upper arm
- When bleeding is under control, call for help
- Blot the wound dry
- Loosen the tourniquet every 15 minutes
- Treat for shock

The proper sequence of events is this:

1. *Apply direct pressure over the wound, using a dressing if available. If no dressing is available, apply the pressure with your bare hand and hold it on without looking underneath.*

2. *At the same time, elevate his arm. This gets gravity on your side and may slow the flow of blood long enough for a clot to form.*
3. *Treat for shock by having him lie down, but keep the arm up. Shock is almost unavoidable, but at least you may avoid having him fall if he passes out.*
4. *If the bleeding continues despite your direct pressure and your elevation, then apply pressure to the supplying vessel on the inside of his upper arm. Do this at the same time you are using direct pressure and elevating the arm.*
5. *As a last resort, apply a tourniquet slightly above the wounded area but not touching the edge of the wounds. This tourniquet SHOULD NOT be loosened by you under any circumstances. It will be removed at the hospital. Note the time you put it on.*
6. *When bleeding is under control, call for help. This might be after direct pressure, arterial pressure, or a tourniquet, depending on which works.*

In severe wounds, running water on the wound, washing it, or blotting it will encourage bleeding. This is life-threatening bleeding, and your first priority is to stop it, not clean it. Also, an antiseptic is unnecessary. Never remove a blood-soaked dressing. It is part of the clot in cases of severe bleeding, and when it is removed, bleeding may resume. Just cover it with another dressing and continue the pressure. If necessary, bandage the dressing in place to maintain the pressure while you call for help, apply arterial pressure, or seek material for a tourniquet.

Quick action in cases like this is necessary because a lot of blood can be lost in a short period of time. A one-quart loss can be life-threatening, and will probably render your victim unconscious, so the lying down position is the safest.

Case 2:

You and a friend have decided to investigate a construction site near your home. The building is just a framework, so you are able to walk from room to room. There is a lot of debris lying around. Suddenly, your friend trips and falls through an opening to the basement. There are no stairs in the opening--he just falls straight down. When you reach him, he is conscious but bleeding heavily from the scalp. He cannot speak clearly, and he says he is nauseated and dizzy. The pupils of his eyes are unequal, and he is frightened from the excessive bleeding. *What will you do?*

?
- Have him sit up to improve his breathing
- Summon help if he continues normal breathing
- Get him a drink of water
- Place a clean cloth lightly over the wound
- Apply direct pressure to the head wound
- Carry him upstairs and go for help
- Turn his head to one side if you see no sign of neck injury, to allow saliva to leave his mouth
- Check to be sure he is still breathing
- To control bleeding, raise his head and shoulders slightly, but do not bend his neck
- Place your jacket under his head only
- Elevate his feet to treat for shock
- Cover him up with a jacket

Approved First Aid procedure:

1. *Check to see if he is breathing adequately. If he stops breathing, give mouth-to-mouth resuscitation.*

2. *Check for any sign of neck injury. If there is none, to control bleeding, raise his head and shoulders slightly, but do not bend his neck.*

3. *Turn his head to one side to allow saliva to exit in case he becomes unconscious.*

4. *Place a clean cloth lightly over the wound. (Your shirt may be the only thing available.) Do not apply pressure to the wound, for if the skull is fractured, you could be pressing on brain tissue. Scalp wounds bleed a lot, but are usually not life-threatening. You may bandage the dressing in place loosely if you have the materials to do so.*

5. *Continue to monitor his breathing. Call for help. If you must leave to get help, make sure he is breathing adequately, and cover him, if you have a jacket, to maintain his body temperature. Summon help.*

Head injuries are very delicate injuries to deal with. Therefore, move your victim as little as possible and be alert for breathing problems. Never place a pillow under the head only. It tilts the head in such a way that the air passage may be closed. It may also aggravate any neck injury. If you feel it is safe to elevate the upper part of the body to control bleeding, you must elevate both the head and shoulders.

Improper handling in this case could cost a life. Know what to do, keep calm and save that life.

*From Current Health, April 1976 © 1976 by Curriculum Innovations, Inc. Reprinted by permission. Further reproduction prohibited.

SAFETY AND EMERGENCY CARE
UNIT XIV

ASSIGNMENT SHEET #14

*WHAT'S YOUR F.A.I.Q. (FIRST AID I.Q.) ON... ELECTROCUTION?

Every year, many victims of all ages die needlessly because people at the scene of a sudden illness or accident do not know what to do. Although it may be hard for you to believe, emergency situations probably develop in your school every week! A student may fall in gym class and sustain a fracture; a teacher may develop symptoms of a heart attack; a 15 year old epileptic may have a seizure. These situations have one thing in common--they require the quick skillful action of another person. If you were there could you--would you--help?

Each month, we are going to test your knowledge of first aid by putting you in an emergency situation. What you learn here could save a life!

When you finish reading the following paragraph STOP and decide what you would do first, second and third. Then read on to see the choices we have given you and try to place them in the correct order. Check your answer. Did you save a life?

You have just come home from school. After leaving your coat and books upstairs, you decide to go to the basement to get some posterboard for a school project. As you reach the bottom of the stairs you see your younger brother lying on the floor next to a work bench. He is very still--in fact, you can't see any sign of breathing. There is an electric sander next to him and the cord is under his shoulder. The floor is dry. There is nobody home but you. What will you do? You have 4 minutes to react.

At this point, without reading further, list what you'd do next. Then try to place the choices below in the proper order.

Your first action should have been to stop the current from flowing through his body.

1. *The safest way to do this is to cut off all power without touching the victim or the cord*

If you hadn't known where to turn it off, your next choice would be to disconnect the cord by knocking it from the plug with a non-conductor like a broom. *Remember,* if you touched a victim of electrocution while he was still in contact with the electricity YOU were just electrocuted too.

Your next priority is to get the victim to breathe. The steps that follow are for mouth-to-mouth resuscitation--the most effective way of helping a victim who has stopped breathing.

2. *Clear the mouth of anything that could stop the flow of air, such as chewing gum, saliva, or even dentures.*

3. *Place the victim on his back.*

4. *Tilt his head back to open the airway and move his tongue out of the back of the throat.*

5. *Pinch the nose so air will go down to the lungs instead of going in the mouth and out the nose.*

6. *Make a seal with your mouth to prevent leakage of air and begin ventilating. Since this was a younger person and perhaps smaller than you, a full breath from you may be too much. Start with less than a full breath.*

You will know immediately if you are successful because you can hear and feel the air go in and come back out when you stop blowing. As long as his heart is beating you have a chance to save him. His skin color will also change to a healthy pink if you are successful.

7. *Continue resuscitation until help arrives or your brother begins breathing on his own.*

Caution! Victims of electric shock are suffering from a type of paralysis of the breathing process and may take a long time to start breathing on their own. They may also stop breathing again and again so don't leave them alone. Some victims of electric shock may also be extremely upset and even irrational upon recovery. They may have to be restrained and calmed while awaiting medical help.

*From Current Health, April 1976 © 1976 by Curriculum Innovations, Inc. Reprinted by permission. Further reproduction prohibited.

SAFETY AND EMERGENCY CARE
UNIT XIV

ASSIGNMENT SHEET #15 - EVALUATION OF YOUR FIRST AID I.Q.

I. DIRECTIONS: Rate your performance on each of the four first aid quizzes using the scale below and selecting the statement that best represents your score. Then, answer the questions below.

Quiz ____________________

_____I know the first aid measures very well.

_____I know some of the first aid measures.

_____I really don't know the first aid measures.

_____Other, explain: ____________________

Quiz ____________________

_____I know the first aid measures very well.

_____I know some of the first aid measures.

_____I really don't know the first aid measures.

_____Other, explain: ____________________

Quiz ____________________

_____I know the first aid measures very well.

_____I know some of the first aid measures.

_____I really don't know the first aid measures.

_____Other, explain: ____________________

Quiz

_____I know the first aid measures very well.

_____I know some of the first aid measures.

_____I really don't know the first aid measures.

_____Other, explain: ____________________

II. DIRECTIONS: In the chart below summarize your evaluation of your first aid I.Q. by listing on the left first aid areas where you have knowledge and on the right first aid areas where you need to develop further.

First Aid Knowledge I Have	First Aid Knowledge I Need to Know

HANDOUT #1

LIFTING AND MOVING TECHNIQUES

STOOPING

1. Stand close to object.
2. Place feet shoulders width apart, with one foot in front of the other for firm footing.
3. Bend your hips and knees, lower your body, keep your back straight, and bring your hands down to the object.

CARRYING

1. Keep your back as straight as possible.
2. Keep weight of load close to the body and centered over your hips.
3. Counterbalance your load by shifting part of your body in the opposite direction from the load to keep it in balance.
4. Put your load down by bending the hips and knees, keeping your back straight and the load close to your body.
5. If the load is too heavy - GET HELP.
6. If two or more people are to carry the load, assign one person as the leader so he/she can give the commands.

LIFTING

1. Check to see if you can easily pull load toward your body. If not, load is too heavy for you - GET HELP.
2. Grasp load firmly and close to the center; get ready to lift.
3. Lift by pushing upward with your legs. Straighten your back to an upright position.
4. Keep the load close to you while lifting.
5. Do not twist your body.
6. To change direction while lifting, shift your feet in the direction in which you want to go.

PUSHING

1. Stand close to the object to be moved.
2. Crouch down with your feet apart.
3. Bend your elbows and put your hands on the load at chest level.
4. Lean forward with chest or shoulder against the object. DO NOT push with your arms or shoulders.
5. Keep your back straight. Crouch and push with your legs.

PULLING

1. Place your feet apart, one foot in back of the other, keeping close to the object to be moved. Allow room so that the forward foot will not be injured.
2. Grasp object firmly, close to its center of gravity.
3. Crouch; lean away from the object.
4. Pull by straightening your legs. Keep your back straight.
5. Walk backward with crouching strides, so that the legs do all the work.

REACHING

1. Use a safe footstool whenever possible.
2. Stand close to object.
3. Place your feet wide apart, one foot in front of the other, so that you have freedom of movement.
4. Maintain good body alignment. Move close to object. Do not reach to the point of straining.
5. When reaching for an object which is above your head, grip it with your palms up and lower it. Keep it close to your body on the way down.

SAFETY AND EMERGENCY CARE
UNIT XIV

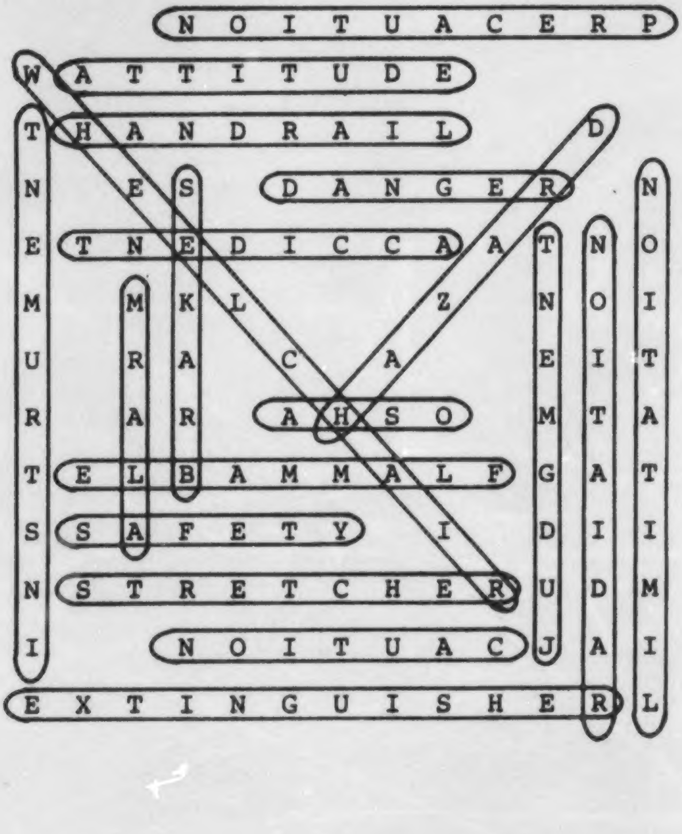
ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1 and #2

Evaluated to the satisfaction of the instructor.

Assignment Sheet #3

accident
alarm
attitude
brakes
caution
danger
extinguisher
flammable
handrail
hazard
instrument
judgment
limitation
OSHA
precaution
radiation
safety
stretcher
wheelchair



			N	O	I	T	U	A	C	E	R	P
W	A	T	T	I	T	U	D	E				
T	H	A	N	D	R	A	I	L			D	
N		E	S		D	A	N	G	E	R		N
E	T	N	E	D	I	C	C	A	A	T	N	O
M		M	K	L				Z		N	O	I
U		R	A		C		A			E	I	T
R		A	R		A	H	S	O		M	T	A
T	E	L	B	A	M	M	A	L	F	G	A	T
S	S	A	F	E	T	Y		I		D	I	I
N	S	T	R	E	T	C	H	E	R	U	D	M
I			N	O	I	T	U	A	C	J	A	I
E	X	T	I	N	G	U	I	S	H	E	R	L

Assignment Sheet #4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 and 15.

Evaluated to the satisfaction of the instructor.

SAFETY AND EMERGENCY CARE
UNIT XIV

UNIT TEST

1. A. Define safety.

   B. Define safety attitudes.

2. Discuss three ways in which individual behavior may cause an accident.

   A.

   B.

   C.

3. In what three areas of liability is a health care institution held responsible?

   A.

   B.

   C.

4. List at least nine of the twelve general rules of safety.

   A.

   B.

   C.

   D.

   E.

F.

G.

H.

I.

5. A. What do the letters O.S.H.A. stand for?

   B. What is the purpose of O.S.H.A.?

6. A. List three safety measures for bed patients.

   1.

   2.

   3.

   B. List five safety measures for transporting patients in a wheelchair.

   1.

   2.

   3.

   4.

   5.

   C. List five safety measures for transporting patients on a stretcher.

   1.

   2.

3.

4.

5.

7. A. Oxygen itself does not burn, but it ________________. (inhibits fires, supports combustion, blazes)

   B. When oxygen is in use, a sign saying ________________ should be placed on the door. (No smoking, no tobacco, no entry)

   C. Do not use ______________ equipment at the bedside when oxygen is in use. (manual, surgical, electrically operated)

   D. The fabric that does not cause sparks and thus may be used for clothing and bed linens when a patient receives oxygen is (linen, synthetic fiber, cotton).

   E. The patient must not receive _______________ while receiving oxygen. (oil back rubs, baths using soap, medication)

8. List seven safety practices in housekeeping.

   A.

   B.

   C.

   D.

   E.

   F.

   G.

9. In the following statements, write True or False in the spaces provided.

   A. __________ Be sure all equipment is in working order before use.

   B. __________ Carefully follow prescribed procedures in handling contaminated materials.

   C. __________ The flame from a Bunsen burner should be golden-yellow.

   D. __________ Mouth suction should be used to pipette strong acids or bases.

   E. __________ Know the location of and how to use the safety shower.

10. Answer the following questions using short answers, words or phrases.

   A. Name three body parts that are particularly sensitive to X-rays.

      1.

      2.

      3.

   B. What is the purpose of film badges?

   C. What articles of clothing containing lead should be worn to protect X-ray personnel?

   D. Why should "re-takes" be avoided?

11. List three safety practices in dental assisting.

   A.

   B.

   C.

12. List three safety measures for pharmacy.

    A.

    B.

    C.

13. Answer the following questions about fire safety using short answers:

    A. List four items you should be able to locate in case of fire.

        1.

        2.

        3.

        4.

    B. What is the first step to take if a fire should start?

    C. Who should be notified first if a fire does start?

    D. What information should be given to person notified in question C?

    E. Which patients should be especially protected in case of fire?

    F. What are the three elements necessary for fire?

        1.

        2.

        3.

G. What are the four types of fire?

1.

2.

3.

4.

H. Put an "X" in front of the major causes of fire.

_____ smoking
_____ drinking
_____ storms
_____ misuse of electricity
_____ defects in heating systems
_____ improper rubbish disposal

I. List three potential causes of fires in health care institutions.

1.

2.

3.

J. What are the types of fire extinguishers?

14. Match the following color codes to their hazards.

A. red	_____	1.	caution
B. purple	_____	2.	fire alarm boxes
C. yellow	_____	3.	alert
D. blue	_____	4.	first aid equipment
E. black & white	_____	5.	stairways
F. orange	_____	6.	radiation equipment
G. green	_____	7.	aisles to direct traffic flow

15. List any seven general safety measures.

    A.

    B.

    C.

    D.

    E.

    F.

    G.

16. Demonstrate and evaluate proper lifting and moving techniques.

17. Test and evaluate your knowledge of first aid measures for selected emergencies.

NOTE: (If activities 16 and 17 have not been completed prior to the test, ask the instructor when they should be completed.)

SAFETY AND EMERGENCY CARE
UNIT XIV

ANSWERS TO TEST

1. A. Safety means freedom from danger, risks, or injury.

   B. Safety attitude is a way of reacting to hazardous or unsafe conditions.

2. Discussion should include:

   A. Poor judgment, or the lack of ability to recognize or accept potential danger.

   B. Physical limitations, or the lack of physical ability to avoid or prevent danger

   C. Lack of training, or a health attendant not having adequate instruction or experience to avoid accidents.

3. A. moral

   B. legal

   C. financial

4. Any nine of the following:

   1. Always report unsafe conditions.

   2. Know and understand each particular job and responsibility.

   3. Accept responsibility for removing any foreign material; water, blood, paper, flower petals, etc.

   4. Walk, never run - especially in the hall and on stairs.
      - Keep to the right
      - Go single file
      - Take one step at a time
      - Use handrails

   5. Watch out for swinging doors.
      - Open door slowly
      - Always use handle or pushplates

   6. Remember that all practical jokes and acts of horseplay are prohibited.

7. Use equipment that is safe and in proper working order.
   - Do not use defective or faulty equipment
   - Check equipment to make sure it is in proper working order
   - Report all defective quipment

8. Perform only those procedures for which you have been properly and adequately trained.

9. Report all incidents and injuries, however slight.

10. Wear proper, acceptable clothing for your particular job.

11. Use proper body mechanics to prevent injury when stooping, lifting, pulling, or reaching.

12. Know the health care institution's fire and disaster plans.
    - Location and use of nearest fire alarm

5. A. Occupational Safety and Health Act

B. The purpose of OSHA is to assure safe and healthful working conditions for every person who works in this country.

6. A. Answer should include three of the following:

1. Lower the bed prior to assisting the patient out of bed.

2. Do not leave bed cranks extended, bed wheels turned out, or footstools in the way.

3. Be sure the patient is aware of and uses hand rails in bathroom to avoid slipping.

4. Psychiatric patients may need especial security to protect themselves and other patients or personnel.

B. Answer should include five of the following:

1. Push wheelchair from behind except when going in and out of elevators or down ramps.

2. Fasten safety straps to hold patient securely in chair.

3. Do not permit patient's clothing or covering to drag the floor.

        4. Always set the brake when the chair is still.

        5. Never leave a patient unattended in a wheelchair. Always notify person in charge when you have delivered a patient.

        6. Always park wheelchairs in a safe place where they will not interfere with traffic.

    C. Answer should include five of the following:

        1. Strap patients onto stretcher with arms at side or folded against chest.

        2. Cover patient, but do not allow cover to drag, because it could be caught in stretcher wheels.

        3. Stand at patient's head and push stretcher.

        4. Never move stretcher at a fast pace.

        5. Never leave a patient unattended on a stretcher until you have notified the person in charge.

        6. Always set the brakes on a parked stretcher to avoid rolling.

7. A. Supports combustion

    B. No smoking

    C. Electrically operated

    D. Cotton

    E. Oil back rubs

8. Answer should include any seven of the following:

    A. Wheel heavy, awkward cleaning equipment.

    B. Clean spills from floor immediately.

    C. When mopping floors, place caution signs conspicuously.

    D. Do not overwax floors or use scatter rugs.

    E. Store equipment out of the way when not in use. Avoid clutter in the work area.

F. Check linen for pins before sending to laundry.

G. Replace or repair frayed or worn electrical cords or plugs.

H. Replace burned out light bulbs at once.

9. A. True

B. True

C. False

D. False

E. True

10. A. 1. skin

2. gonads

3. blood-forming organs

B. Indicate amount of radiation being received.

C. Gloves and aprons.

D. Radiation hazard to patient.

11. Answer should include any three of the following:

A. Familiarize yourself with instructions accompanying pieces of equipment prior to use.

B. Be sure to use proper instruments for assigned task.

C. Pass any instrument with handles first and working point away from receiver.

12. Answer should include any three of the following:

A. Keep all medicines and poisons in a safe place.

B. Label all containers.

C. Do not leave filled bottles or other containers uncapped.

D. Narcotics, or any other drug with a potential for abuse must be kept in a locked case.

13. A. 1. fire extinguisher

2. fire alarm

3. exits

4. routes to exits

B. Pull handle on fire alarm box.

C. Switchboard operator.

D. Exact location and nature of fire.

E. Patients given sedatives, those comatose, restrained or otherwise helpless.

F. 1. heat

2. fuel

3. oxygen

G. 1. ordinary combustible

2. flammable liquid

3. electrical

4. combustible material

H. ☒ smoking

☐ drinking

☐ storms

☒ misuse of electricity

☒ defects in heating systems

☒ improper rubbish disposal

I. Any three of the following:

oxygen equipment
flammable liquids
anesthetic gases
flammable chemicals in laboratories
flammable liquids and chemicals in pharmacy
combustible materials in storage
cooking facilities

J. 1. dry chemical

2. carbon dioxide (CO_2)

3. pressurized water

4. soda-acid

14. D 1.

A 2.

F 3.

G 4.

E 5.

B 6.

C 7.

15. Answer should include any seven of the following:

A. Always identify patient prior to any procedure.

B. Avoid climbing when you must reach items stored on a high shelf, use a safety ladder.

C. Avoid horseplay and practical jokes.

D. Report any unsafe condition or equipment that you observe.

E. Walk, never run. Always look where you are going, take care at intersections.

F. Open swinging doors cautiously and slowly.

G. Keep drawers and cabinet doors closed when not in use.

H. Remember that children require special attention and care to prevent accidents.

I. Think safety -- develop a safety attitude.

16. Evaluated to the satisfaction of the instructor.

17. Evaluated to the satisfaction of the instructor.

HEALTH CARE PROCEDURES
UNIT XVI

UNIT OBJECTIVE

After completing this unit, the student will be able to exhibit competency in selected health care skills and procedures identified in this unit. This competency will be evidenced through demonstration and by satisfactorily completing a performance evaluation on each procedure.

SPECIFIC OBJECTIVES

After completing this unit, the student will demonstrate the ability to:

1. Obtain a culture smear.
2. Streak an agar plate.
3. Clean dirty or used glassware.
4. Determine blood type.
5. Determine Rh factor.
6. Use graduated cylinders and volumetric flasks.
7. Use pipettes.
8. Perform clinitest for sugar in urine.
9. Perform Tes-Tape Test for sugar in urine.
10. Perform urine test for acetone.
11. Determine specific gravity of urine.
12. Determine pH of urine.
13. Use a microscope.
14. Perform capillary puncture.
15. Chart conditions of the teeth.
16. Measure intake and output.
17. Give back rubs.

18. Clean a patient unit.

19. Care for a colostomy.

20. Give a retention enema.

21. Give a cleansing enema.

22. Carry out double bagging technique.

23. Use proper isolation techniques.

24. Insert a rectal tube.

25. Give and remove bedpan and/or urinal.

26. Make an unoccupied bed and an open bed.

27. Make an occupied bed.

28. Make a postoperative bed.

29. Position the patient.

30. Give a complete bed bath.

31. Assist with or give a partial bath.

32. Assist with a tub bath or shower.

33. Assist with a sitz Bath.

34. Give catheter care.

35. Give care to an incontinent patient.

36. Clean an examination or treatment room.

37. Take oral temperature.

38. Take rectal temperature.

39. Take axillary temperature.

40. Take pulse and respirations.

41. Take apical/radial pulse.

42. Set up sterile trays.

43. Use a nasal cannula.

44. Apply moist heat - hot soaks.

45. Apply dry heat - hot water bag.

46. Apply moist cold treatment - cold compresses.

47. Apply dry cold treatment - ice bag.

48. Assist patient to dangle.

49. Put on and remove mask and gown.

50. Collect a urine specimen.

51. Collect a clean catch or midstream urine specimen.

52. Collect a twenty-four hour specimen.

53. Collect a feces or stool specimen.

54. Collect a sputum specimen.

55. Admit a patient.

56. Discharge a patient.

57. Transfer a patient.

58. Transport patients (transfer a patient in and out of bed.)

59. Transport patients (assist patient to walk.)

60. Transport patients (assist patient to stand.)

61. Transport patients (put patient on a stretcher.)

62. Transport patients (accompany a patient to other departments.)

63. Fill out incident reports.

64. Apply restraints.

65. Test reflexes of other students.

66. Assist a patient to use crutches.

67. Give active range-of-motion exercises.

68. Give passive range-of-motion exercises.

69. Measure vision.

70. Test hearing.

71. Assist with mouth care.

72. Comb hair.

73. Shampoo hair.

74. Shave a patient.

75. Clean thermometers.

76. Clean medical instruments.

77. Perform CPR.

78. Use correct posture.

79. Serve and assist at mealtimes.

80. Feed another person.

81. Utilize aseptic technique.

82. Use proper handwashing technique.

83. Turn the patient on side.

84. Assist patient into a wheelchair.

85. Sit patient up in bed.

86. Make and receive phone calls.

87. Record information on patient's chart.

88. Greet patients and visitors.

89. File patient records.

90. Fill out insurance reports.

91. Assist in teaching principles of nutrition.

92. Identify types of diets.

93. Demonstrate techniques for accident prevention and office safety.

94. Evaluate equipment to see that it meets safety standards.

95. Observe and report client/patient behavior.

96. Handle emergency use of intercom.

97. Demonstrate emergency evacuation procedure.

HEALTH CARE PROCEDURES
UNIT XVI

SUGGESTED ACTIVITIES

I. Suggested activities for the instructor:

  A. Provide students with objective sheet.

  B. Discuss unit and specific objectives.

  C. Provide students with job sheets as you cover the supportive information in other units (Units VIII-Unit XV).

  D. Discuss the job sheets before you demonstrate the procedure.

  E. Provide a question and answer period before and after the students have been introduced to the procedure.

  F. Allow students to demonstrate competency in each procedure and skill (complete a performance evaluation on each procedure).

II. Instructional Materials:

  A. Objective sheet

  B. Job sheets.

    1. Job Sheet #1 - Obtain a Culture Smear

    2. Job Sheet #2 - Streak an Agar Plate

    3. Job Sheet #3 - Clean Dirty or Used Glassware

    4. Job Sheet #4 - Determine Blood Type

    5. Job Sheet #5 - Determine Rh Factor

    6. Job Sheet #6 - Use of Graduated Cylinders and Volumetric Flasks

    7. Job Sheet #7 - Use of Pipettes

    8. Job Sheet #8 - Perform Clinitest for Sugar in Urine

    9. Job Sheet #9 - Perform Tes-Tape Test for Sugar in Urine

    10. Job Sheet #10 - Perform Urine Test for Acetone

    11. Job Sheet #11 - Determine Specific Gravity of Urine

12. Job Sheet #12 - Determine pH of Urine
13. Job Sheet #13 - Use a Microscope
14. Job Sheet #14 - Perform Capillary Puncture
15. Job Sheet #15 - Chart Conditions of the Teeth
16. Job Sheet #16 - Measure Intake and Output
17. Job Sheet #17 - Give Back Rubs
18. Job Sheet #18 - Clean a Patient Unit
19. Job Sheet #19 - Caring for a Colostomy
20. Job Sheet #20 - Give a Retention Enema
21. Job Sheet #21 - Give a Cleansing Enema
22. Job Sheet #22 - Carry out Double Bagging Technique
23. Job Sheet #23 - Use Proper Isolation Techniques
24. Job Sheet #24 - Insert a Rectal Tube
25. Job Sheet #25 - Give and Remove Bedpan and/or Urinal
26. Job Sheet #26 - Make an Unoccupied Bed and an Open Bed
27. Job Sheet #27 - Make an Occupied Bed
28. Job Sheet #28 - Make a Postoperative Bed
29. Job Sheet #29 - Position the Patient
30. Job Sheet #30 - Give a Complete Bed Bath
31. Job Sheet #31 - Assist With or Give a Partial Bath
32. Job Sheet #32 - Assist With a Tub Bath or Shower
33. Job Sheet #33 - Assist With a Sitz Bath
34. Job Sheet #34 - Give Catheter Care
35. Job Sheet #35 - Give Care to an Incontinent Patient
36. Job Sheet #36 - Clean an Examination or Treatment Room
37. Job Sheet #37 - Take Oral Temperature

38. Job Sheet #38 - Take Rectal Temperature
39. Job Sheet #39 - Take Axillary Temperature
40. Job Sheet #40 - Take Pulse and Respirations
41. Job Sheet #41 - Take Apical/Radial Pulse
42. Job Sheet #42 - Set up Sterile Trays
43. Job Sheet #43 - Use a Nasal Cannula
44. Job Sheet #44 - Apply Moist Heat - Hot Soaks
45. Job Sheet #45 - Apply Dry Heat - Hot Water Bag
46. Job Sheet #46 - Apply Moist Cold Treatment - Cold Compresses
47. Job Sheet #47 - Apply Dry Cold Treatment - Ice Bag
48. Job Sheet #48 - Assist Patient to Dangle
49. Job Sheet #49 - Put on and Remove Mask and Gown
50. Job Sheet #50 - Collect a Urine Specimen
51. Job Sheet #51 - Collect a Clean Catch or Midstream Urine Specimen
52. Job Sheet #52 - Collect a Twenty-Four Hour Specimen
53. Job Sheet #53 - Collect a Feces or Stool Specimen
54. Job Sheet #54 - Collect a Sputum Specimen
55. Job Sheet #55 - Admit a Patient
56. Job Sheet #56 - Discharge a Patient
57. Job Sheet #57 - Transfer a Patient
58. Job Sheet #58 - Transporting Patients (Transfer a Patient In and Out of Bed)
59. Job Sheet #59 - Transporting Patients (Assist Patient to Walk)
60. Job Sheet #60 - Transporting Patients (Assist Patient to Stand)

61. Job Sheet #61 - Transporting Patients (Put Patient on a Stretcher)

62. Job Sheet #62 - Transporting Patients (Accompany a Patient to Other Departments)

63. Job Sheet #63 - Fill Out Incident Reports

64. Job Sheet #64 - Apply Restraints

65. Job Sheet #65 - Test Relexes of Other Students

66. Job Sheet #66 - Assist a Patient to Use Crutches

67. Job Sheet #67 - Give Active Range-of-Motion Exercises

68. Job Sheet #68 - Give Passive Range-of-Motion Exercises

69. Job Sheet #69 - Measure Vision

70. Job Sheet #70 - Test Hearing

71. Job Sheet #71 - Assist With Mouth Care

72. Job Sheet #72 - Comb Hair

73. Job Sheet #73 - Shampoo Hair

74. Job Sheet #74 - Shave a Patient

75. Job Sheet #75 - Clean Thermometers

76. Job Sheet #76 - Clean Medical Instruments

77. Job Sheet #77 - Perform CPR

78. Job Sheet #78 - Use Correct Posture

79. Job Sheet #79 - Serve and Assist at Mealtimes

80. Job Sheet #80 - Feed Another Person

81. Job Sheet #81 - Utilize Aseptic Technique

82. Job Sheet #82 - Use Proper Handwashing Technique

83. Job Sheet #83 - Turn the Patient on Side

84. Job Sheet #84 - Assist Patient Into a Wheelchair

85. Job Sheet #85 - Sit Patient Up in Bed

C. Transparency Masters

1. TM-1 Fluid Intake and Output Record
2. TM-2 Autoclave
3. TM-3 Sterilizing Oven
4. TM-4 Ultrasonic Cleaner

III. Unit References

A. Minnesota Secondary Health Occupation Curriculum Guidelines, Division of Vocational-Technical Education, Minnesota Department of Education.

B. Oklahoma State Board of Vocational and Technical Education, Health Service Careers. Oklahoma: Curriculum and Instructional Materials Center, 1979.

C. Orientation to Health Occupations, Industrial Materials Laboratory, University of Missouri-Columbia.

D. Wood, Lucile A., Nursing Skills for Allied Health Services, Vol. I, II and III. Philadelphia: W.B. Saunders Co.

E. Simmers, Louise M., Diversified Health Occupations Competency Based Curriculum. New York: Delmar Publishers, 1980.

HEALTH CARE PROCEDURES
UNIT XVI

CROSS-REFERENCE FOR PROCEDURES

Job Sheet Number		Title
1	XII*	Obtain a Culture Smear
2	XII*	Streak an Agar Plate
3	XII*	Clean Dirty or Used Glassware
4	XII* or X-E*	Determine Blood Type
5	XII* or X-E*	Determine Rh Factor
6	XII*	Use of Graduated Cylinders and Volumetric Flasks
7	XII*	Use of Pipettes
8	X-G* or XII*	Perform Clinitest for Sugar in Urine
9	X-G* or XII*	Perform Tes-Tape Test for Sugar in Urine
10	X-G* or XII*	Perform Urine Test for Acetone
11	X-G* or XII*	Determine Specific Gravity of Urine
12	X-G* or XII*	Determine pH of Urine
13	XII*	Use a Microscope
14	XII* or X-D*	Perform Capillary Puncture
15	XI*	Chart Conditions of the Teeth
16	X-G* or XV*	Measure Intake and Output
17	X-A* or X-B*	Give Back Rubs
18	XIV*	Clean a Patient Unit
19	X-C*	Caring For a Colostomy
20	X-C* or X-G*	Give a Retention Enema

Job Sheet Number		Title
21	X-C* or X-G*	Give a Cleansing Enema
22	XIV* or XII*	Carry Out Double Bagging Technique
23	XIV* or XII*	Use Proper Isolation Techniques
24	X-C* or X-G*	Insert a Rectal Tube
25	X-G* or X-C*	Give and Remove Bedpan and/or Urinal
26	XIV* or X-B*	Make an Unoccupied Bed and an Open Bed
27	XIV* or X-B*	Make an Occupied Bed
28	XIV* or X-B*	Make a Postoperative Bed
29	X-B*	Position the Patient
30	X-A*	Give a Complete Bed Bath
31	X-A*	Assist With or Give a Partial Bath
32	X-A*	Assist With a Tub Bath or Shower
33	X-A*	Assist With a Sitz Bath
34	X-G*	Give Catheter Care
35	X-G*	Give Care to an Incontinent Patient
36	XIV*	Clean an Examination or Treatment Room
37	XV*	Take Oral Temperature
38	XV*	Take Rectal Temperature
39	XV*	Take Axillary Temperature
40	XV*	Take Pulse and Respirations
41	XV*	Take Apical/Radial Pulse
42	XIV*	Set up Sterile Trays
43	X-E*	Use a Nasal Cannula
44	X-A* or X-B*	Apply Moist Heat - Hot Soaks

Job Sheet Number		Title
45	X-A* or X-B*	Apply Dry Heat - Hot Water Bag
46	X-A* or X-B*	Apply Moist Cold Treatment - Cold Compresses
47	X-A* or X-B*	Apply Dry Cold Treatment - Ice Bag
48	X-B*	Assist Patient to Dangle
49	XIV*	Put On and Remove Mask and Gown
50	X-G*	Collect a Urine Specimen
51	X-G*	Collect a Clean Catch or Midstream Urine Specimen
52	X-G*	Collect a Twenty-Four Hour Specimen
53	X-C*	Collect a Feces or Stool Specimen
54	X-E*	Collect a Sputum Specimen
55	XV*	Admit a Patient
56	XV*	Discharge a Patient
57	XV*	Transfer a Patient
58	XIV*	Transporting Patients (Transfer a Patient In and Out of Bed)
59	XIV*	Transporting Patients (Assist Patient to Walk)
60	XIV*	Transporting Patients (Assist Patient to Stand)
61	XIV*	Transporting Patients (Put Patient On a Stretcher)
62	XIV*	Transporting Patients (Accompany a Patient to Other Departments)
63	XV* or XIV*	Fill Out Incident Reports
64	XIV*	Apply Restraints

Job Sheet Number		Title
65	X-B* or X-F*	Test Reflexes of Other Students
66	X-B*	Assist a Patient To Use Crutches
67	X-B*	Give Active Range-of-Motion Exercises
68	X-B*	Give Passive Range-of-Motion Exercises
69	X-F*	Measure Vision
70	X-F*	Test Hearing
71	XI*	Assist With Mouth Care
72	X-A*	Comb Hair
73	X-A*	Shampoo Hair
74	X-A*	Shave a Patient
75	XIV*	Clean Thermometers
76	XIV* or XII*	Clean Medical Instruments
77	X-D* or XIV*	Perform CPR
78	X-B*	Use Correct Posture
79	XI*	Serve and Assist at Mealtimes
80	XI*	Feed Another Person
81	XIV* or XII*	Utilize Aseptic Technique
82	XIV* or XII*	Use Proper Handwashing Technique
83	X-B*	Turn the Patient On Side
84	X-B*	Assist Patient Into a Wheelchair
85	X-B*	Sit Patient Up in Bed

*Suggested unit to which the procedure can apply.

HEALTH CARE PROCEDURES
UNIT XVI

ADDITIONAL SKILLS TO BE COVERED

Applicable Unit to Cover Skill	Skill
XV	Make and Receive Phone Calls
XV	Record Information on Patient's Chart
VIII	Greet Patients and Visitors
XV	File Patient Records
XV	Fill Out Insurance Reports
XI	Assist in Teaching Principles of Nutrition
XI	Identify Types of Diets
XIV	Demonstrate Techniques for Accident Prevention and Office Safety
XIV	Evaluate Equipment to See That It Meets Safety Standards
XV	Observe and Report Client/Patient Behavior
XIV	Handle Emergency Use of Intercom
XIV	Demonstrate Emergency Evacuation Procedure

HEALTH CARE PROCEDURES
UNIT XVI

*JOB SHEET #1 - OBTAIN A CULTURE SMEAR

Equipment and Supplies:
- Sterile cotton applicator sticks
- Culture medium-some prepacked with sterile sticks
- Sterile test tube with media if no prepacked media
- Label
- Pen/pencil for marking

Procedure:

1. Wash hands. Assemble equipment.

2. Greet and identify patient. Explain procedure.

Note: Obtain the patient's consent for procedure.

3. Check the area to be cultured. If written order, check order for site.

Note: Specimens can be taken from nose, throat, open wounds or other body areas.

4. Remove the sterile applicator from the package. Handle at wooden end only. Make sure you do not touch the cotton tip to any surface or that you do not contaminate it in any way.

Caution: Tip must remain sterile or test will be inaccurate.

5. Place the sterile cotton tip at the area to be cultured. Use a gentle, yet firm rotation type motion to cover the tip of the cotton applicator with a sample specimen.

6. Remove the applicator from the culture site. Be careful not to contaminate the tip.

7. Place the applicator into the sterile tube or media container. Take care not to touch the sides of the container.

Caution: Avoid contamination of the specimen.

Note: Brace your arms against your body to keep hands steady while inserting applicator stick.

8. Check to be sure tip is down in culture media.

Note: This keeps specimen moist for examination.

9. Label the specimen with the patient's name, address or room number, hospital number if any, doctor's name, date, and the site from which specimen obtained.

Checkpoint

10. Take the specimen to the lab immediately.

11. Wash hands thoroughly. Protect yourself.

12. Clean and replace all equipment used.

*Reprinted with permission of Louise M. Simmers, from Diversified Health Occupations to be published by Delmar Publishers, Inc., in 1983.

HEALTH CARE PROCEDURES
UNIT XVI

*JOB SHEET #2 - STREAK AN AGAR PLATE

Equipment and Supplies:
- Agar plate with correct media
- Culture specimen
- Label
- Pen or marker
- Incubator

Procedure:

1. Wash hands. Assemble equipment.

Note: Lab director will state which type agar to use.

2. Remove applicator with culture specimen from tube. Hold at wooden end. Take care to avoid contamination of cotton tip. Check tip to be sure it is still moist.

Note: If the specimen is dry, the organisms have probably died. The results would not be accurate.

3. Open the agar plate. Take care not to touch the inside of the plate. Place the lid with the top down against the counter. In this way, the inside of the lid stays clean.

4. Hold the plate firmly in one hand or place it on a flat surface.

5. With a gentle motion, start at the top of the agar plate and place the cotton tip in one corner. Use a rotary motion (turn the tip so all sides cover the agar) and go from side to side about halfway down the plate. Now use an up and down motion on the lower left quarter of the plate. To cover the final quarter, return to the side to side motion.

Caution: Be gentle. Do not break into the agar.

Note: Only cover the agar one time in each area. Do not go back over areas already covered.

6. Check to be sure all areas of the agar have been streaked. Different streaking methods can be used. Use the one your lab or physician prefers.

7. Dispose of the applicator stick. Some labs require burning of the stick to avoid contamination. In other areas, the stick is placed in a bag and then placed in a trash container.

8. If a sensitivity study is to be done, antibiotic discs are now placed on the agar. An automatic dispenser can be used. If none is available, use sterile thumb forceps. Place the discs around the agar. Leave room between discs. Make sure that the discs are not too close to the edge of the agar plate.

9. Pick up the agar plate lid by the side edges. Take care not to touch the inside of the lid. Place the lid on top of the agar plate.

10. Label the specimen with the patient's name, doctor's name, address or hospital number, date, time, site of specimen, and other required information.

11. Place the agar plate in the incubator for 24-36 hours.

Note: This provides moisture and warmth for the growth of the organism. The agar provides food and moisture to stimulate growth.

12. Check the temperature of the incubator. It is usually set at 36-37 degrees C.

13. Clean and replace all equipment used.

Checkpoint

14. Wash hands thoroughly. Prevent infection and spread of the disease.

*Reprinted with permission of Louise M. Simmers, from Diversified Health Occupations to be published by Delmar Publishers, Inc., in 1983.

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #3 --CLEAN DIRTY OR USED GLASSWARE

I. Tools and equipment required:

A. Dirty, used beaker or flask

B. Biodegradable detergent

C. Two pans or basins

D. Brushes

E. Paper toweling

F. Distilled water supply

G. Peg board or rack to hold glassware

II. Procedures

A. Obtain dirty beaker or flask, use sink or pan large enough to wash glassware, and appropriate brush.

B. Prepare biodegradable detergent in tap water according to manufacturer's instructions.

C. Wash all surfaces, inside and out, of dirty glassware using brush. Be sure to wash stopper if it has one.

D. Rinse glassware in running tap water four or five times allowing it to drain between rinsings.

E. Examine vessel for streaking or cloudiness. If not absolutely clean, use acid cleaning solution method given in instructions.

F. If clean, next fill pan with distilled water. Rinse twice in distilled water, draining each time.

G. Finally, rinse vessel inside and out in stream of running distilled water.

H. Invert on peg board rack or in basket to dry. Place accompanying stopper on clean paper towel.

I. Rinse brush in tap water, hang to dry

J. Empty pan, rinse, and drain dry.

K. Clean working area.

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #4 - DETERMINE BLOOD TYPE

I. MATERIALS:
- marking pen
- anti-A typing serum
- anti-B typing serum
- clean slides
- tooth picks

II. PROCEDURES:

A. Take a clean slide and draw a line down the center.

B. On the upper left hand side mark A, and on the upper right hand side mark B.

C. Place one drop of anti-A typing serum on the left and one drop of anti-B typing serum on the right.

D. Have a finger puncture made by a medically trained person.

ATTENTION: The unit on capillary puncture is a prerequisite to this unit. This step MUST only be done by the instructor or a medically trained person willing to accept the responsibility.

E. Allow a drop of blood to fall onto the serum on each side of the slide.

F. Mix with a toothpick for 10 seconds; tilt the slide by gently rocking back and forth for about 30 seconds.

G. Observe the slide for agglutination.

H. Determine your ABO blood type:

If the blood clumps on the A side, it is type A

If the blood clumps on the B side, it is type B

If the blood clumps on both sides, it is type AB

If the blood does not clump on either side, it is type 0

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #5 - DETERMINE Rh FACTOR

I. INFORMATION: In order to obtain accurate results, Rh typing is performed at 37° C (body temperature). The lamp on your microscope can be used to rest the slide on for testing. In the laboratory, Rh typing is usually done in a test tube, at 37° C, to give accurate results.

II. MATERIALS:
- a clean slide
- anti-Rh serum
- tooth pick
- lamp (for heat)

III. PROCEDURE:

A. Place a slide over the microscope lamp.

B. Place one drop of anti-Rh serum on the slide.

C. Place one drop of blood in the serum.
NOTE: A finger puncture must be made by a medically trained person willing to accept the responsibility.

D. Mix with a toothpick.

E. Wait for two minutes. (Follow recommended time for the company's materials you are using.)

F. Tilt the slide back and forth three times to mix further.

IV. OBSERVING RESULTS:

A. Determine if the blood is Rh+ (positive) or Rh- (negative).

1. If the blood clumps, it is Rh+.

2. If the blood does not clump, it is Rh-.

Rh+	The Blood Clumps
Rh-	The Blood Does Not Clump

NOTE: Rh clumping is usually not as visible as ABO clumping.

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #6--USE OF GRADUATED CYLINDER AND VOLUMETRIC FLASKS

I. Tools and equipment required

100 ml. graduated cylinder

100 ml. volumetric flask

Water colored with food coloring

Medicine dropper

II. Procedures

A. Graduated cylinder, 100 ml.

1. Note the two sets of numbers. Begin reading the scale at the bottom of the cylinder. One set of numbers begins at 100 and goes upward to zero. The other set starts at zero and ascends to 100. Thus, if 35 ml. of liquid is poured into the cylinder you would read the 35 ml. on the side beginning at zero.

2. Fill the cylinder with colored water almost to the 30 ml. mark. Use medicine dropper to add the last few drops, insuring accuracy. Read the bottom of the meniscus.

3. When filling a cylinder with liquid, pour the liquid along the side of the container and allow some time for drainage to insure accuracy of measurement.

4. When pouring contents from the cylinder, use the lip, pour slowly, and allow time for drainage.

5. Practice filling and emptying your graduate, using quantities suggested by your instructor.

6. If other sizes of graduates are available, practice filling and emptying them.

B. Volumetric flasks.
(NOTE: A volumetric flask has a single calibration mark on the neck of the container.)

1. Pour colored water into the 100 ml. flask to the calibration. If necessary, use the medicine dropper for the final few drops. Read the bottom of the meniscus.
2. Fill other sizes of volumetric flasks that are available,using the same procedure.

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #9--PERFORM TES-TAPE TEST FOR SUGAR IN URINE

I. Equipment

A. 3.81 cm (1 1/2 in) Tes-tape

B. Urine specimen

C. Color chart on Tes-tape dispenser

II. Procedure

A. Wash hands

B. Identify patient and explain procedure

C. Provide privacy

D. Obtain urine specimen; use second voided specimen, if possible

E. Take specimen to utility room or to patient's bathroom

F. Withdraw 3.81 cm (1 1/2 in) of Tes-tape from dispenser

(NOTE: Do not use tape if it has turned brown.)

G. Dip distal end of tape into urine and remove immediately after it has been uniformly moistened

H. Wait one minute

(NOTE: Use second hand watch to time test.)

I. Compare tape with color chart on exterior of dispenser

J. Clean work area

K. Record findings

(NOTE: Usual color designations are yellow, indicating zero percent, and varying shades of green, ranging from light to dark indicating 1+, 2+, 3+, or 4+.)

L. Report findings immediately

(NOTE: Patients taking certain medication may need to have their urine tested only with the Tes-tape method because others will be inaccurate.)

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #10-PERFORM URINE TEST FOR ACETONE

I. Equipment

A. Acetest tablet

B. Paper towel

C. Eyedropper

D. Color chart

II. Procedure

A. Wash hands

B. Identify patient and explain procedure

C. Provide privacy

D. Obtain urine specimen

E. Take specimen to utility room or patient's bathroom

F. Place clean paper towel on flat, dry surface

G. Place one tablet on paper without hands touching it

H. Draw urine up in eyedropper

I. Drop one drop on tablet

J. Wait exactly thirty seconds

K. Compare color of the tablet with color chart on bottle

(NOTE: Reactions are negative or positive. If color is unchanged or tablet becomes cream colored, the test is considered negative. If tablet turns from lavender to a deep purple, the test is considered positive. Color designations are as follows: lavender indicates a trace amount of acetone; medium purple indicates a moderate amount of acetone; dark purple indicates a large amount of acetone.)

L. Report finding

HEALTH CARE PROCEDURES
UNIT XVI

*JOB SHEET #11 - DETERMINE SPECIFIC GRAVITY OF URINE

Equipment and Supplies: Urine specimen in container
Urinometer float
Urinometer jar or cylinder
Paper towels or gauze
Paper and pencil/pen

Procedure:

1. Wash hands. Assemble equipment.

2. Check cleanliness of urinometer float and cylinder. Clean as necessary.

Note: Dirty equipment will interfere with reading.

3. Obtain a urine specimen at room temperature.

4. Fill the urinometer jar to within one inch from the top with urine.

Note: Make sure the urine is well mixed.

5. Using paper or gauze, remove any bubbles from the top of the urine.

6. Grasp the urinometer stem at the top and insert it slowly into the jar. Avoid wetting the stem above the water line. Twirl the urinometer float slightly as you insert it.

Note: A spinning float will not stick to the sides of the urinometer jar or cylinder.

7. Make sure the float is away from the sides of the jar. Also make sure it is not touching the bottom.

8. When the urinometer float comes to rest, take the reading. Read at eye level. Take the reading at the lower line of the meniscus. Checkpoint

Note: Do not read above the meniscus. This is inaccurate. Normal specific gravity is 1.010 to 1.025.

9. Record the reading. Include patient's name, date, and sp.gr. with the number noted.
10. Recheck reading as indicated.
11. Clean the float and jar thoroughly. Make sure the stem and jar are dry. Replace all equipment.

Note: A wet stem will cause a change in the reading since it causes the urinometer float to settle further down in the urine.

*Reprinted with permission of Louise M. Simmers, from Diversified Health Occupations to be published by Delmar Publishers, Inc., in 1983.

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET # 12 - DETERMINE pH OF URINE

I. INFORMATION: The measurement to determine if a solution is an acid or base is called pH. This measurement is stated by numbers which have been mathematically determined. The range of pH is from 1 to 14. Numbers above 7 are bases, and those below 7 are acids. A pH of 7 is considered neutral or neither an acid or a base.

The pH of urine is usually slightly acid. There are many factors such as diet, emotional stress, or rate of breathing that influence the urine pH. The urine collected during periods of activity is more acid than urine collected during periods of sleep. This is due to the greater breathing rate during periods of activity which causes more acid in the urine.

An abnormal pH of urine is only an indicator of an abnormal substance in the urine. Other tests would need to be performed to determine what are these substances. In the following exercises you will test the pH of several different solutions and then test the pH of your urine.

II. MATERIALS: a sample of your urine
pHydrion paper

III. PROCEDURE:

1. Dip a small strip of the paper into the urine.
2. Compare the paper strip with the color chart and determine the pH.

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #7--USE OF PIPETTES

I. Tools and equipment required:

Volumetric pipette

Graduated pipette

Beaker

Salt solution colored with red food coloring

II. Procedures:

A. Select a volumetric pipette.

B. Hold the stem of the pipette between thumb and middle finger, leaving index finger free.

C. Do not cover the calibration with your fingers.

D. Place tip of pipette in beaker of colored salt solution--tip must remain below surface of liquid to avoid drawing in air.

E. Apply mouth to mouthpiece; carefully draw colored solution into the pipette well above the calibration mark.

F. Try to keep the mouthpiece of the pipette dry.

G. Remove pipette from mouth and quickly cover mouthpiece with index finger--holding salt solution in pipette.

H. Release pressure to allow salt solution to leave pipette gradually until bottom of meniscus is at desired calibration.

I. Then place tip of pipette in second beaker and allow solution to drain.

J. Repeat pipetting process, using graduated pipette. In using the graduated pipette however, blow the last drop from the pipette rather than allowing it to drain as you did with the volumetric pipette.

K. Continue to practice the transfer of salt solution with pipettes until you have attained accuracy.

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #8--PERFORM CLINITEST FOR SUGAR IN URINE

I. Equipment

  A. Clinitest tablets

  B. Test tube

  C. Eyedropper

  D. Color chart

  (NOTE: Pamphlet is usually supplied with tablets.)

  E. Urine specimen

II. Procedure

  A. Wash hands

  B. Identify patient and explain procedure

  C. Provide privacy

  D. Obtain urine specimen

  (NOTE: The Clinitest is done four times a day, before meals and before bedtime unless physician's orders differ. If possible, have patient void, discard, and then get second voiding for testing.)

  E. Take specimen to utility room or patient's bathroom

  F. Assemble test tube, Clinitest tablet, and eyedropper on table surface near running water

  G. Hold test tube in one hand between thumb and forefinger about 30 mm (1 1/4 in) from the top of the tube; with the other hand, draw up five drops of urine with the eyedropper

  (CAUTION: EXTREME ACCURACY IS NECESSARY. DROP THE URINE INTO THE CENTER OF THE TEST TUBE.)

  H. Rinse eyedropper in running water

  I. Draw ten drops of water into eyedropper and add to urine in test tube

  J. Rotate test tube gently

  K. Remove one Clinitest tablet from bottle and drop it into the test tube

  (NOTE: Do not use tablets which are moist or have changed color.)

L. Continue to hold test tube at top

(CAUTION: THE DISSOLVING TABLET CAUSES A BOILING REACTION, AND THE BOTTOM OF THE TEST TUBE WILL BECOME HOT.)

M. Shake tube gently after fifteen seconds or after boiling stops; compare with Clinitest color chart

N. Clean work area

O. Record readings on patient's chart

(NOTE: Reactions are negative or positive. If fluid is blue, there is no sugar present and the test is considered negative. If fluid changes in color from dark green to orange, the test is positive. Check the color change in test tube with the block on the color chart indicating the degree of sugar content: trace, 1+, 2+, 3+, or 4+.)

P. Report findings immediately to person giving medications

(NOTE: The dosage of insulin given to a diabetic patient will be based on the amount of sugar in the urine.)

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #13- USE OF MICROSCOPE

I. Equipment needed: Microscope

II. Procedure:

A. Keep both eyes open while using the microscope.

B. Turn nosepiece until low power objective clicks into place.

C. Adjust the light source (mirror or substage lamp) with eye at eye piece. If using mirror, the flat side should face the stage if a condenser is used. Use the concave side of the mirror if no condenser is present.

D. Use the diaphragm to control the amount of light to be used.

E. Place slide on stage.

F. Using the coarse adjustment, move the tube downward until the low power objective is close to the slide. Be sure to watch the tube move as you turn the coarse adjustment wheel.

G. Never focus downward with coarse adjustment wheel while peering through the barrel. This will avoid breaking slides, cover slips, and even lenses.

H. Place eye at eye piece. Gradually move the tube upward until you see the object on the slide.

I. If you fail to find the object, repeat Steps 6 and 8.

J. Use the fine adjustment wheel to obtain a sharper image.

K. Readjust the light source and diaphragm to produce an optimum image.

L. Change the objectives from low power to high power. The image should stay in focus, but use the fine adjustment wheel to maintain a clear image.

M. When you have finished working with the microscope:

1. Remove slide.
2. Clean eye piece, objectives, and stage with lens paper.
3. Place low power objective in place.
4. Focus all the way down with coarse adjustment wheel.

N. The magnification of the object viewed is the product of the magnification of the eye piece multiplied by the magnification of the objective used.

Example:	Eyepiece	10X
	Objective	40X
	Magnification	400X

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #14 - PERFORM A CAPILLARY PUNCTURE

I. INFORMATION: One of the easiest and most common methods of collecting blood is the capillary puncture. The tip of the finger is most often used with adults. Capillary blood can be drawn from the finger or earlobe of adults or from the big toe or heel of infants.

II. MATERIALS:

sterile lancet (Do not use a lancet on more than one person)
alcohol
cotton
gauze
2 slides
bandaid
receptacle to hold used lancets

III. PROCEDURE:

A. Wash your hands.

B. Clean slides with alcohol. Wipe completely dry with gauze.

C. Inform the "patient" what you are going to do, that **a small prick will be felt.**

D. Rub the ring finger of the patient using downward strokes. This will increase circulation.

E. Clean the finger tip with cotton soaked in alcohol.

F. Remove the wrapper from sterile blood lancet.

G. Hold the sterile lancet in your writing hand.

H. Hold the patient's ring finger in your other hand applying gentle pressure below the first joint.

I. Make the finger puncture along the side of the finger tip. Use a quick firm jab with the blade tip of the lancet. (Note: The blade tip prevents making a puncture too deep.)

J. Dispose of the lancet in a labeled receptacle.

K. Wipe away the first drop of blood with a piece of gauze.

L. Dispose of used materials. Make sure lancets are disposed of so they cannot "poke" any other personnel, e.g., place in a sealed tube.

M. Immediately prepare a blood smear.

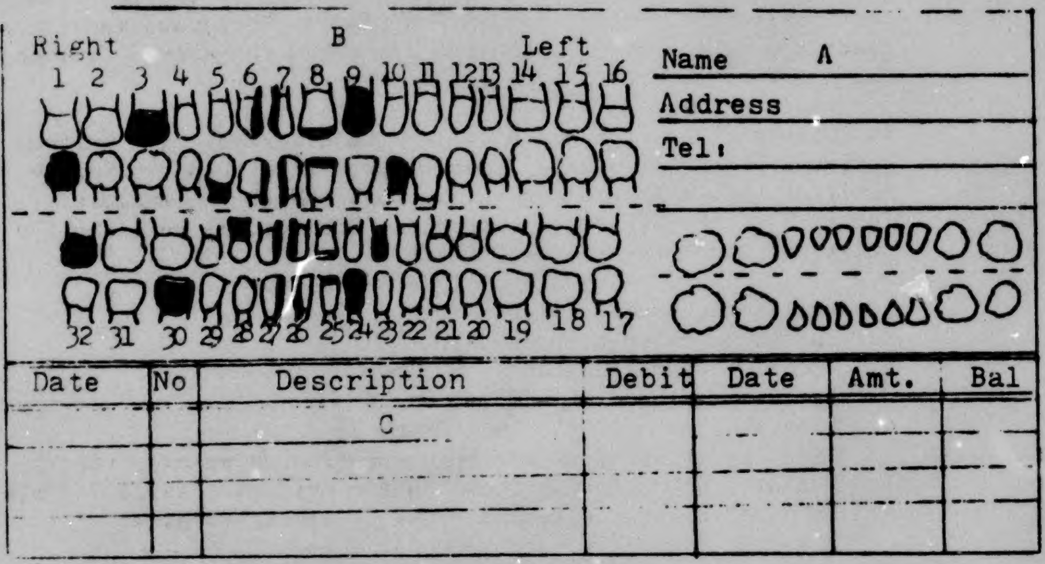
HEALTH CARE PROCEDURES
UNIT XVI

*JOB SHEET #15 - CHART CONDITIONS OF THE TEETH

INTRODUCTION: As a dental assistant, you may be required to chart conditions of the teeth on a dental chart or insurance form. Forms, symbols used, abbreviations, and other similar factors vary from office to office. However, some basic guidelines are provided below. Change these as needed for your working area.

INFORMATION:

Diagram 1: Sample Dental Chart


Right
B
Left
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
Name
A
Address
Tel:
32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17
Date
No
Description
Debit
Date
Amt.
Bal
C

1. Dental Chart Sections:

   a. Labeled A in Diagram 1: Personal Patient Information, Name, address, etc.

   b. Labeled B in Diagram 1: Charting area, diagram of teeth

   c. Labeled C in Diagram 1: Treatment rendered area, record of all treatments, services done to patient, cost, paid, etc.

2. Dental charts are legal records. They must be complete, neat and correct.

3. Permanent or secondary teeth are represented by the diagrams on the left in Diagram 1, Part B. The teeth are numbered according to the universal method.

   Deciduous or primary teeth are represented by the diagram on the right. They are not labeled on this card. It may be wise to label them by universal method before using this section of the chart.

4. Maxillary teeth are represented for permanent dentition in two rows above the dotted line of Diagram 1. Deciduous maxillary teeth are represented by one row above the dotted line. Mandibular permanent or secondary teeth are represented by the two rows of teeth below the dotted line on Diagram 1. Deciduous mandibular teeth are represented by the one row below the dotted line on the right of the card.

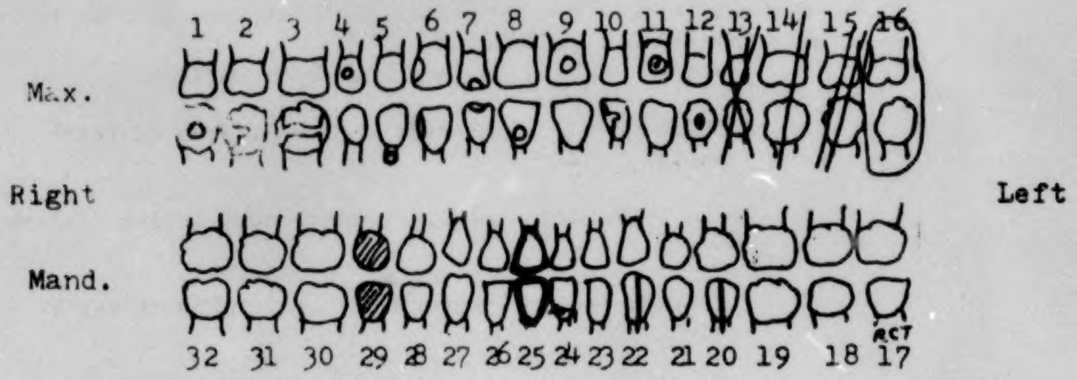
5. Surfaces of the teeth are shown on the diagrams. The various surfaces have been shaded in on Diagram 1 to help you become familiar with the card representations. Note the examples for each of the following surfaces. The numbers refer to the universal code number of the teeth.

   a. Occlusal: example #1 and #32
   b. Incisal: example #8 and #25
   c. Buccal: example #3 and #30
   d. Labial: example #9 and #24
   e. Lingual: example #5, 10, 23 and 28
      Note the larger area of representation on anterior teeth
   f. Mesial: not actually shown on the anatomic diagram. This is noted along the mesial edges of other surfaces. Example #6 and 27.

   g. Distal: not actually shown on the anatomic diagram. This is noted along the distal edges of other surfaces. Example #7 and 26.

   NOTE: Diagram 1 is a sample card. Dental charts vary slightly. Never hesitate to ask questions about which surfaces are represented by different diagrams.

Diagram 2: Sample Dental card with conditions noted



6. Charting Guidelines: Notations on the chart will vary from doctor to doctor. In some cases a pencil is used. If errors occur, they can be erased. In other cases, a pencil is used but work completed is filled in in ink. In still other cases, colored pencils are used. Red indicates carious lesions (decay) or work to be done. Blue indicates work completed such as restorations, crown, etc. Check with the doctor about which system he desires and learn his system. Never hesitate to ask questions while you learn the preferred method.

   Note: For these exercises, use a regular pencil.

7. Common symbols used for anatomic diagrams: Note that these too can vary. Check on type symbols you should use in your own work area.

   Note: Samples of the symbols used are shown on Diagram 2. The example numbers refer to the universal number for the teeth.

   0 Circle or outline area involved for a carious lesion or decay. Carious lesions are shown on Diagram 2 on the following teeth and surfaces:

   1 Occlusal
   2 Distoocclusal
   3 Mesioocclusodistal
   4 Buccal
   5 Lingual
   6 Distal
   7 Incisal
   8 Lingual
   9 Labial
   10 Mesiolingual

●	Circle filled in solid, amalgam restoration Example: #12 occlusal amalgam restoration
◉	Circle with dot in middle, esthetic restoration such as composite or silicates Example: #11 composite on labial surface
X	Missing tooth, put X over entire diagram of tooth Example: #13
/	To be extracted, put one line through entire diagram Example #14
//	Tooth has been extracted, put lines through entire diagram Example #15
0	Circle entire diagram of tooth, tooth impacted (tooth is unable to erupt into its proper position) Example #16
RCT or ENDO	Tooth needs endodontic (root canal) treatment Example #17
❘	Tooth with completed endodontic (root canal) treatment is marked with a heavy line by pulp canals Example #20 and 22
〰	Fracture of tooth, saw line is drawn in affected area Example #24
▨	Gold crown, circle the entire crown and fill in with lines Example #29
○	Circle entire crown for porcelin crown or esthetic crown Example #25

Note: Remember these are one group of symbols. Other symbols are in use. Learn the symbols you are required to use.

8. Recording treatments/services: In addition to the anatomic diagram, all treatments or services done to the patient are recorded in the lower section of the dental chart. (See part C on Diagram 1)

The following points should be noted:

a. Only services done are recorded in this section. Work done by a previous doctor, carious lesions, missing teeth, etc. are not noted.

b. Information must be recorded in ink.

c. Information must be neat, correct and complete.

d. Abbreviations are used to denote tooth, surfaces, work done, bases-cements, etc.

e. Information recorded usually includes date, number of tooth, services done (exam, x-rays, restorations, crowns, impressions, etc.) At times charges and payments are also noted on this record.

f. Note: If work was not done to a particular tooth (e.g. full mouth x-rays and exam), leave the number column blank.

9. Common abbreviations used for services rendered:

Note: This list varies from area to area. Use the abbreviation that your doctor prefers.

AM or Amal.	Amalgam restoration, silver filling
BWXR	Bite wing x-rays
CR or Ant.	Anterior restoration, esthetic restoration, composite restoration
Cr or Cn	Crown
Ex. or Clin. Ex.	Examination or clinical examination
Ext.	Extraction
FMXR	Full mouth series of x-rays
Imp.	Impression
Pro or Prophy	Prophylaxis, cleaning teeth
RCT or Endo	Endodontic or root canal treatment

REFERENCES:

Douglas, Secretarial Dental Assistant, pp. 80-87.

Ehrlich and Rizzuto, Introduction to Recording Dental Charting, pp. 32-68.

Morrison, In the Dentist's Office, pp. 34-35.

Richardson and Barton, The Dental Assistant, pp. 202-203.

Schwarzrock and Jensen, Effective Dental Assisting, pp. 378-380.

*Reprinted with permission of Louise M. Simmers, from Diversified Health Occupations to be published by Delmar Publishers, Inc., in 1983.

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #16- MEASURING AND RECORDING FLUID INTAKE AND OUTPUT

I. Wash hands and assemble the following equipment:

  A. Intake and output record

  B. Pen

  C. Graduated pitcher

II. Procedure for Intake:

  A. Explain to the patient what you plan to do and how the patient can can help.

  B. Record the following information immediately under the intake column on the intake and outtake record (see chart):

    1. Amount of liquid the patient takes with meals.

    2. Amount of water and other liquids taken between meals.

    3. All other intake:

      a. Intake given by mouth.
      b. Intake given intravenously.
      c. Intake given by tube feeding.

    4. Place all information on the patient's chart from the intake and output record, according to hospital policy.

III. Procedure for Output:

  A. Save fluid specimen and take to utility room.

  B. Pour fluid from container into graduate. Measure amount.

  C. Record amounts immediately under output column on intake and output record. All liquid output should be recorded.

  D. Empty fluid into proper place after measuring.

  E. Rinse graduate with cold water. Clean according to hospital policy and return to the proper place.

  F. Place output information on the patient's chart according to hospital policy; perspiration and blood loss may be described as little, moderate, or excessive.

COUNTY GENERAL HOSPITAL

FLUID INTAKE & OUTPUT RECORD

Name ______________________ **Ward** ______________

INTAKE					OUTPUT			
							OTHERS	
Date	Time	Meth./ Admin.	Solution	Amt. Rec'd	Time	Urine Amt.	Kind	Amt.
5/10					7:30	60cc		
5/10	8:00	oral	coffee	60cc				
		oral	grape juice	120cc				
					9:00		vomitus	180cc
5/10	10:00	oral	tea	120cc				
5/10					10:15	120cc		
5/10	10:45	oral	milk	280cc	11:00	90cc		
5/10	12:15	oral	water	180cc				
5/10	1:00	oral	ginger ale	360cc				
						270cc		180cc
TOTAL				1120cc	**TOTAL**			450cc

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #17--GIVE A BACK RUB

I. Equipment needed

- A. Bath towel
- B. Lotion
- C. Washcloth
- D. Basin with warm water
- E. Soap and soap dish

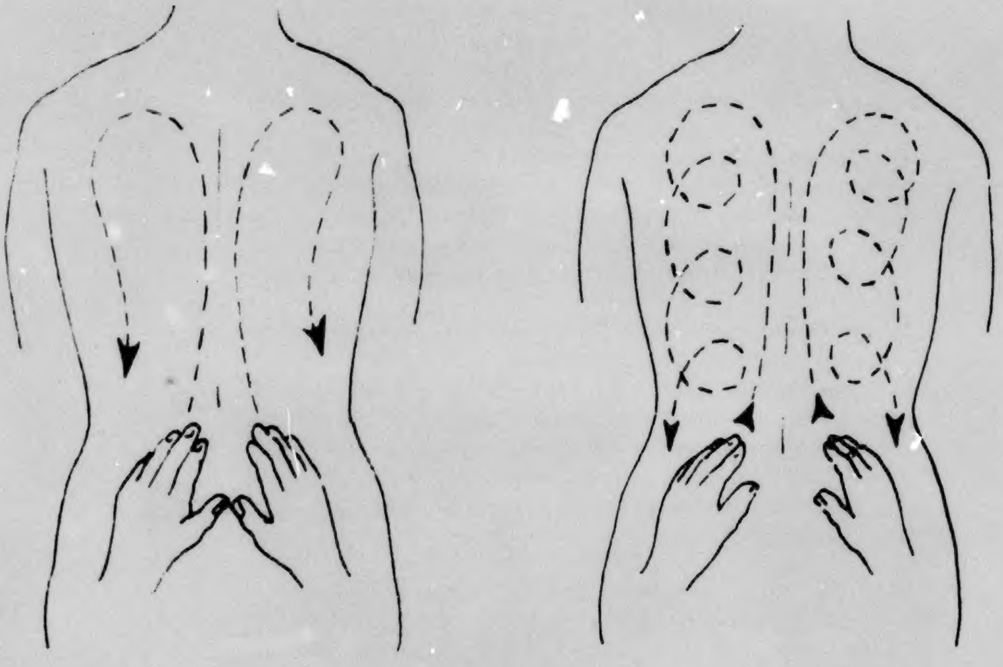
II. Procedure

- A. Wash hands
- B. Assemble equipment
- C. Identify patient and explain procedure
- D. Provide privacy
- E. Assist patient
    1. Have patient turn on side
    2. Place bath towel close to patient's back to protect bedding
- F. Give back care
    1. Wash, rinse, and dry back
    2. Warm lotion by rubbing it in hands first or by setting lotion container in warm water
    3. Apply lotion to entire back, beginning at lumbosacral area; apply up both sides of spinal column to neck, across shoulders, and down to lumbosacral area (Figure 1)
    4. Give attention to bony prominences, reddened areas, or pressure areas
- G. Give after care
    1. Adjust bed covers; assist patient to comfortable position
    2. Remove equipment, clean, and return to proper place

H. Wash hands

I. Report and record procedure and observations

FIGURE 1



Long Strokes

Circular Strokes

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #18--CLEAN A PATIENT UNIT

I. Equipment needed

   A. Receptacle for soiled linen

   B. Basin with disinfectant solution

   C. Pair of unsterile gloves

   (CAUTION: Disinfectant is usually quite strong and can be harmful to skin.)

   D. Cleaning cloths

   E. Clean linen

   F. Newspaper or plastic bag

II. Procedure

   A. Check unit for articles left by last patient

   (NOTE: Turn these in to supervisor.)

   B. Remove each piece of linen separately

   (CAUTION: Do not shake linens; hold them away from uniform.)

   C. Place used linens in receptacle for soiled linen

   D. Take bedside utensils to utility room for cleaning

   E. Place basin with disinfectant solution on bedside table

   F. Move mattress crosswise to foot of bed

   G. Put gloves on, if desired

   H. Wash and dry top and sides of mattress

   I. Raise headrest

   J. Wash and dry all exposed parts of bed

   K. Lower headrest

   L. Turn mattress, clean side down, onto upper half of bed

M. Wash and dry other side of mattress

N. Place rubber sheet on springs

O. Wash and dry one side of rubber sheet

P. Place rubber sheet on mattress, clean side down

Q. Wash and dry other side of rubber sheet

R. Raise foot of bed

S. Wash and dry all exposed parts of bed

T. Wash and dry bedside table and other furniture

U. Put basin of disinfectant solution on a newspaper or plastic bag spread on floor

V. Wash and dry top of bedside table

W. Return cleaning equipment to utility room and care for it properly

(NOTE: This procedure may vary with each institution.)

X. Place cleaned bedside utensils in unit

Y. Make closed bed

(NOTE: This procedure may vary with each institution.)

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #19- CARING FOR A COLOSTOMY

I. Procedure for Skin Care

A. Remove bag slowly from patient's stoma so the skin can be protected. Place the bag in the bedpan. Later flush the contents down the toilet and place the bag in a paper sack. Throw away the sack.

B. Wash the skin around the stoma with mild soap and warm water. Rinse the area well.

C. Pat the skin dry and apply Benzoin on the skin around stoma and fan dry.

D. Apply another coat of Benzoin and fan dry. (The Benzoin acts as a protective coating so the skin doesn't get so irritated and it helps the bag stick to the skin just as long as the Benzoin dries thoroughly.)

E. Prepare the bag for the patient's stoma. Adjust the opening on the bag. The opening on the new bag should fit snugly around the stoma. Be careful to not make the hole too large as the skin would be exposed to the digestive enzymes and cause irritation.

F. Fold the lower end of the pouch over and over, then fan fold trying not to wrinkle the pouch. Secure the end with a rubber band.

G. Check to make sure the bag opening fits over the stoma. Peel off the adhesive covering and allow some air to enter the bag. Place the bag over the stoma and press firmly into place.

II. Procedure for Irrigation

Irrigation is an attempt to teach the bowel new habits. The purpose of irrigation is to empty the colon.

A. Fill the water bag with prescribed amount of lukewarm tap water. Soap solution, which may be an irritant, is not necessary. Start with one quart of water. In time, the patient will know if his body requires more or less than 1000 cc's.

B. Prime the tubing to prevent air from being pushed into the colon and producing more flatus.

C. Suspend the bag from a hook or bar so that the bottom of the water container is at shoulder level when the patient is in position to begin.

D. Remove the pouch or stoma covering and apply the irrigating sleeve so that returns are contained and directed into the toilet.

E. Assist the patient to sit on the toilet or on a chair next to it. Some people prefer to stand or kneel. Place the end of the irrigating sleeve in the toilet bowl.

F. Lubricate the cone tip or catheter with a water soluble jelly such a K-y or Lubafax. Working from the top of the irrigating sleeve, gently insert the cone tip directly into the stoma and start the flow of water. The structure of the cone prevents it from being inserted too far. It acts as a dam to keep the water from flowing back around it. The cone is held in place by slight pressure.

If a catheter is used, it must be threaded into the stoma in the direction determined by a finger examination. NEVER FORCE THE CATHETER! If obstruction is met, have the patient relax and try again. It may help to start the flow of water before insertion into the stoma or try rolling the catheter side to side while it enters the stoma. The catheter must not be inserted too far, 3-4 inches is enough. It may be beneficial to mark the tubing so there is a guide to follow.

Water may enter the transverse portion of the colon if the catheter is inserted too far or if the water runs in too fast. This is not harmful, but the returns may take several hours to be completed.

G. The water must run in slowly. It should take at least three minutes for the container to empty. Clamp off the tubing when the water container is empty. Try to leave the cone in place for several seconds (15-30) for a more successful irrigation. Remove the cone or catheter and wait for results. They may be immediate or delayed for a minute or two.

H. Results may be best if the irrigation follows a meal or something hot or cold to drink. Peristalsis may be stimulated after the water is inside by massaging the abdomen from right to left or having the patient bend forward a few times to stimulate evacuation of the water and feces.

I. The procedure usually takes about one hour from start to finish. The majority of the results will come back during the first 15 to 20 minutes. After the initial returns, the end of the irrigating sleeve may be clamped off or folded to the top and the ends clipped together. Then the patient is free to leave the toilet area and either return to bed or tend to other matters while waiting for the returns to be completed. The results should be complete within 45 to 60 minutes after the water is instilled. In time, the patient will learn to know how the abdomen feels when all the water, feces, and flatus has been eliminated.

J. Initially, there may be several movements between irrigations. This is known as spillage. In time, the movements should become less frequent. Patients should be instructed to irrigate daily for several weeks. When there is no spillage for several consecutive days, they may begin irrigating every other day. Once regulation occurs, they will not have to worry if they are a few hours early or late for the irrigation.

Not all patients who attempt irrigation are successful at gaining bowel control. For some, it becomes a trying, frustrating procedure that does not meet the intended goal of regulation. If spillage is persistent and the patient finds it necessary to either empty or change a collecting pouch frequently, it may be psychologically beneficial for that individual to discontinue irrigating and allow the bowel to evacuate naturally.

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #20-GIVE A RETENTION ENEMA

I. Equipment needed

A. Solution as prescribed in a small pitcher or graduate

B. Rectal tube or small catheter

C. Funnel or Asepto syringe

D. Bath blanket

E. Lubricant

F. Bed protector

G. Emesis basin

H. Toilet tissue

I. Procedure

A. Wash hands

B. Assemble equipment

C. Prepare solution

(NOTE: Temperature of solution should be 37.6°C [100°F] and usually less than 200 cc is given.)

D. Identify patient and explain procedure

E. Provide privacy

F. Replace top covers with bath blanket

G. Assist patient to turn onto LEFT side

H. Place protective pad under buttocks

I. Lubricate 5.18-7.62 cm (2-3 in) of the tip of the rectal tube or catheter

J. Insert tip of tube 5.18-7.62 cm (2-3 in) into the rectum

K. Hold the funnel or Asepto syringe 20.32 cm (8 in) or less above the anus

(NOTE: Holding the funnel lower causes less pressure and aids the patient's ability to retain the solution.)

L. Keep adding solution until all has been taken

M. Clamp off tubing just before last of solution has been taken

N. Remove the rectal tube slowly, cover with tissue, and place in emesis basin

O. Leave bed protector under patient's buttocks

P. Replace top covers; provide for patient's comfort

Q. Remove, clean, and replace equipment

R. Wash hands

S. Report and record treatment and observations

JOB SHEET #21 GIVE A CLEANSING ENEMA

I. Equipment needed (Transparency 6)

A. Disposable enema bag with tubing and clamp

(NOTE: Irrigating metal cans are used in some institutions.)

B. Emesis basin

C. Lubricant

(NOTE: Disposable unit contains lubricant.)

D. Toilet tissue

E. Bath thermometer

F. Pitcher or graduate

G. Solution as prescribed

(NOTE: Disposable unit contains packet of mild liquid soap.)

H. Bath blanket

I. Bed protector

J. Bedpan with cover

II. Procedure

A. Wash hands

B. Assemble equipment

C. Prepare solution as prescribed

(NOTE: Solution may be mixed in bag after water is measured and temperature is determined in graduate.)

(CAUTION: When preparing solution, such as soap suds or physiologic saline solution, temperature of the solution should be 37.2°C [105°F]. Solution given at 43.3°C [110°F] or higher may burn the mucous lining of the intestines.)

D. Identify patient and explain the procedure

E. Provide privacy

F. Replace top covers with bath blanket or cover

G. Assist patient to turn to LEFT side, if permitted, in Sim's position

H. Place bed protector under patient's buttocks

I. Allow a small amount of solution to flow into the emesis basin or bedpan to expel the air and cooled solution from the tubing; clamp or pinch tubing

J. Lubricate 5.18-7.62 cm (2-3 in) of the tip of the rectal tube, using lubricant on a piece of toilet tissue

K. Separate buttocks and gently insert tip of tube (3-4 inches) into anus

L. Release the tubing, allowing solution to run slowly

(NOTE: Instruct the patient to breathe deeply through the mouth and to tell of any cramping or discomfort that occurs.)

M. Regulate the flow of solution by pinching off the tube momentarily at intervals during the administration

N. Clamp off the tubing when most of the solution has been given or when the patient indicates he/she is unable to take any more

(NOTE: Clamping off the tubing before the last solution runs into it prevents air from reaching the patient.)

O. Withdraw rectal tube slowly; cover with a piece of tissue and place it in emesis basin

P. Assist the patient onto the bedpan

Q. Elevate head of bed, if permitted

R. Place toilet tissue and communication device within patient's reach

S. Remove the equipment; dispose of properly

T. Check the patient frequently

U. Remove the bedpan when the enema and feces have been completely expelled

V. Assist the patient as necessary with cleansing

W. Empty bedpan, observing the results of the enema, the color, amount, and consistency of the feces

X. Wash hands

Y. Assist the patient in handwashing

Z. Provide for patient's comfort

AA. Wash hands

BB. Report and record procedure and observations

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #22--CARRY OUT DOUBLE BAGGING TECHNIQUE

I. Equipment

A. Plastic bags inside isolation room

B. Plastic bags, usually large and red

C. Secure fastener, tapes or ties

D. Tape or labels

E. Marking pens

II. Procedure

(NOTE: Ask someone to help you. You stay outside the unit to remain clean; the second person works inside the unit.)

A. Hold wide open a clean, cuffed bag at entrance to unit

B. Have person inside unit place bagged items from the unit inside clean bag

C. Fold over top of bag and fasten it

D. Label bags to indicate what contaminated articles are inside

(NOTE: Label contents in several places with letters large enough to be read easily.)

E. Take bags to proper disposal or unit area

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET#23--USE PROPER ISOLATION TECHNIQUES

I. Equipment

  A. Bags for double bagging and labels

  B. Receptacle for soiled linen

  C. Bedside equipment: bedpan, urinal, kidney basin, soap dish, drinking glass, water pitcher

  D. Masks and gowns

  E. Linens for unit

II. Procedures

  A. Linen

    1. Carry only needed linen into unit

    2. Keep receptacle for soiled linen in unit

    3. Put linens in double bags and label when removing linens from unit

    (NOTE: Most linens can be disinfected by usual laundering process but if contaminated by spore-forming organisms, they should be sterilized.)

    4. Dispose of disposable linens with other disposables in bags

  B. Food utensils

    1. Discard disposable settings

    2. Wash, double bag, and label all others when taken from unit

  C. Bedpans, urinals, and excreta--Empty immediately and disinfect with solution used in that particular facility

  D. Other body discharges

    1. Bag in double bags discharges on tissue wipes from eyes, nose and mouth; double bag contaminated dressings

    2. Dispose of immediately according to facility's method

E. Sending specimens to laboratory

1. Keep outside of specimen container clean or transfer to clean container

2. Label and bag specimens outside unit before taking to lab

F. Taking vital signs

1. Leave equipment needed inside unit; if necessary to remove, disinfect before removing

2. Use a wall clock with second hand, if possible

3. Protect your watch by placing it on a clean paper towel or in plastic bag

G. Transporting patients to other areas of hospital

1. Have patient wear clean gown and mask

2. Drape wheelchair or stretcher with a clean blanket

3. Wrap patient in blanket, leaving face uncovered

4. Tell department what type of infection the patient has so proper precautions can be taken

H. Care of body after death

1. Care for body as usual, then wrap in shroud

2. Drape stretcher with clean shroud

3. Transfer body to stretcher

   (NOTE: Outside the unit a clean person wraps the body, touching only outside of clean shroud.)

4. Label so the pathologist or mortician will know what kind of isolation was carried out

5. Transport

   (NOTE: Each institution has its own procedure to carry out in case of death.)

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET#24 –INSERT A RECTAL TUBE

I. Equipment needed

   A. Small rectal tube

   B. Lubricant

   C. Toilet tissue

   D. Bed protector

   E. Adhesive tape

   F. Container or paper towels

II. Procedure

   A. Wash hands

   B. Assemble equipment

   C. Identify patient and explain procedure

   D. Provide privacy

   E. Turn patient onto LEFT side; remove top covers sufficiently to expose buttocks

   F. Lubricate tip of rectal tube

   G. Gently insert tube about 7.62-10.16 cm (3-4 in)

   H. Tape in place with adhesive tape if necessary

   I. Place end of tube in container or in folded paper towels in case there is expulsion of fecal material

   J. Leave in place prescribed length of time, usually twenty to thirty minutes

   K. Remove rectal tube; provide for patient's comfort

   L. Clean and return equipment to storage

   M. Wash hands

   N. Report and record treatment and observations

HEALTH CARE PROCEDURES
UNIT XVI

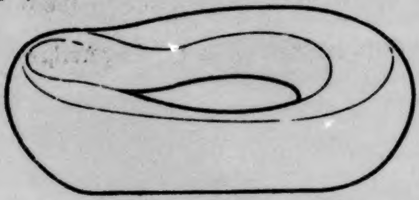
JOB SHEET#25--GIVE AND REMOVE BEDPAN AND/OR URINAL

I. Equipment needed

A. Bedpan and/or urinal

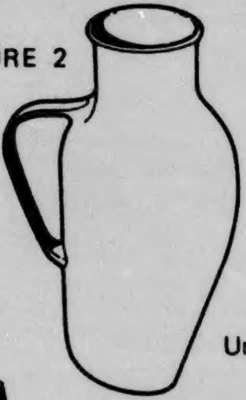
(NOTE: Patients who are in casts or are unable to use a conventional bedpan may use a fracture pan. See Figures 1, 2, and 3.)

FIGURE 1



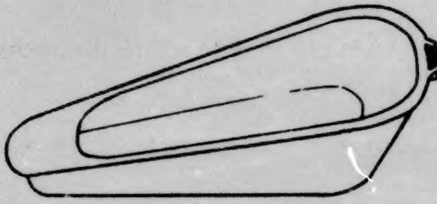
Bedpan

FIGURE 2



Urinal

FIGURE 3



Fracture Pan

B. Bedpan cover

C. Toilet tissue

D. Wash basin

E. Soap

F. Towel

II. Procedure for giving bedpan

A. Wash hands

B. Warm bedpan; cover and take to patient's bedside

C. Provide privacy

D. Turn back upper bedding part way without exposing patient

E. Place patient on bedpan

    1. If patient can help

        a. Instruct patient to raise hips by flexing knees and resting weight on heels

        b. Support lower back with one hand and slip bedpan in place with the other

    2. If patient is unable to help

        a. Level bed and turn patient onto side, flexing leg

        b. Slip bedpan as far as possible under patient's hips

        c Turn patient onto bedpan while holding bedpan

F. Raise backrest, if permitted

G. Place toilet tissue within reach

H. Place communication device within reach and instruct patient to call for assistance or service when needed

I. Leave patient alone if permitted, but return frequently to check

J. Answer the patient's signal promptly

K. Remove bedpan

    1. If the patient can help

        a. Assist patient to raise hips by slipping hand under small of back and helping patient to raise buttocks

        b. Remove bedpan and cover

    2. If the patient is unable to assist

        a. Level bed; holding bedpan, turn patient to side

        b. Remove bedpan and cover

L. Cleanse patient as necessary

    1. Clean area with toilet tissue with patient on side; place soiled tissue in bedpan; cover bedpan

    2. Wash with soapy water, if necessary, and rinse

    3. Dry well

M. Make patient comfortable
    1. Straighten bedding
    2. Readjust bed to desired position
    3. Remove screen

N. Remove bedpan from unit
    1. Look at contents of bedpan before emptying
    2. Empty contents into toilet
    3. Rinse with cold water; cleanse thoroughly according to institution's procedure

O. Wash hands

P. Provide soap and basin of water for patient to wash hands, if needed

Q. Report and record the color, amount, odor, and consistency of feces or urine

III. Procedure for giving urinal

A. Take covered urinal to patient's bedside

B. Place covered urinal within reach of patient if patient is able to care for self

C. For patient who needs assistance
    1. Expose patient, as needed
    2. Separate the patient's legs to permit placement of urinal
    3. Place penis into the urinal far enough that it does not slip out as the patient begins to urinate
    4. Hold urinal in place, if necessary

D. Place communication device within reach if patient uses urinal unassisted

E. Remove covered urinal from unit
    1. Measure urine, if necessary
    2. Save specimen, if needed

F. Rinse urinal with cold water; use brush if necessary; return to storage

G. Wash hands

H. Assist patient to wash hands

I. Make patient comfortable

J. Wash hands

K. Record amount and characteristics of urine

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #26--MAKE AN UNOCCUPIED BED AND AN OPEN BED

I. Equipment

   A. Bed pad or mattress cover

   B. Two large sheets

      (NOTE: Fitted bottom sheets are used in some institutions.)

   C. Waterproof drawsheet

   D. Cotton drawsheet

   E. Blanket, if needed

   F. Pillowcases

   G. Bedspread

II. Procedure for unoccupied or closed bed

   A. Adjust bed to convenient level with bed flat

   B. Put mattress pad on mattress

   C. Place bottom sheet on bed

      1. With raw edge to mattress and smooth side to patient

      2. With hem even with foot of mattress

      3. With middle of sheet near center of bed

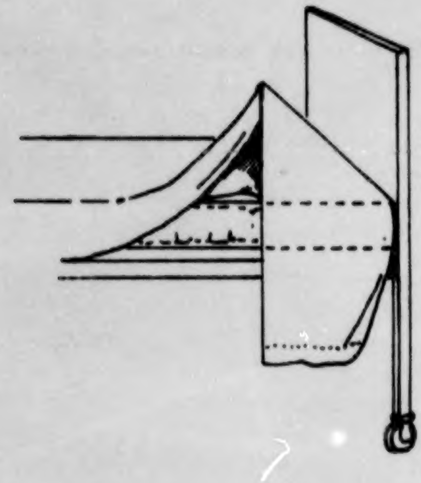
      4. With enough to tuck under head of mattress so sheet will remain tucked in place

   D. Tuck sheet smoothly under head of mattress

E. Make a mitered corner at head of mattress

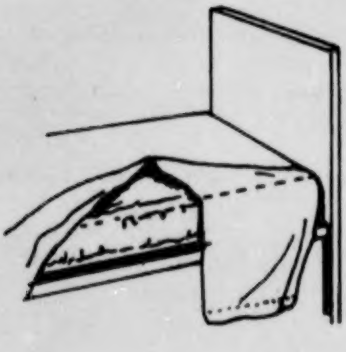
1. Pick up edge of sheet so that it forms a triangle with the side edge of the sheet held perpendicular to the mattress (Figure 1)

FIGURE 1



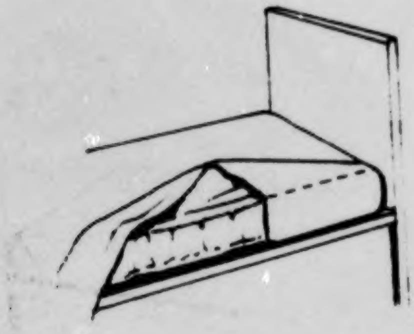
2. Lay folded corner on mattress (Figure 2)

FIGURE 2



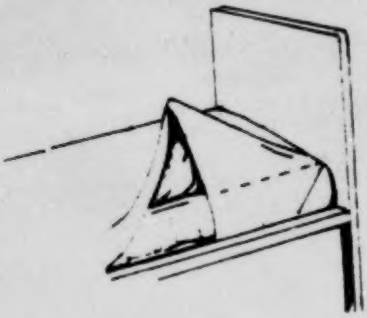
3. Tuck hanging part under mattress (Figure 3)

FIGURE 3



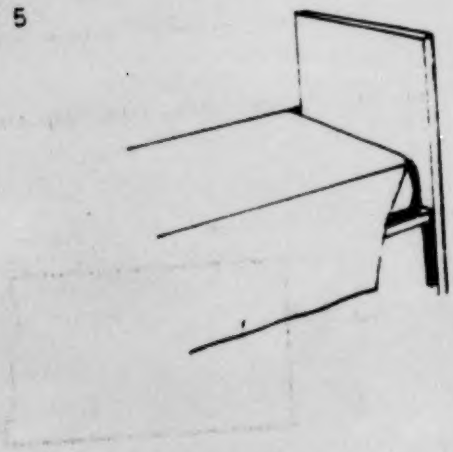
4. Hold sheet in place against mattress; with other hand, pick up corner of folded part from top of mattress (Figure 4)

FIGURE 4



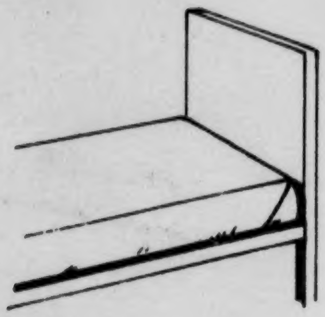
5. Drop corner of sheet over side of mattress (Figure 5)

FIGURE 5



6. Tuck sheet under mattress along the side from head to foot (Figure 6)

FIGURE 6



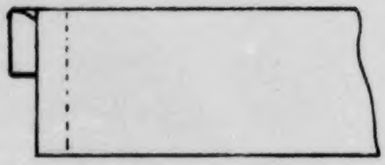
F. Place center of rubber sheet at center of bed with upper edge about sixteen inches from head of mattress

G. Place cotton drawsheet over rubber sheet with cotton sheet extending over each side of rubber sheet

H. Tuck both drawsheets under mattress

I. Place and unfold top sheet, wrong side up and hem even with top edge of mattress (Figure 7)

FIGURE 7

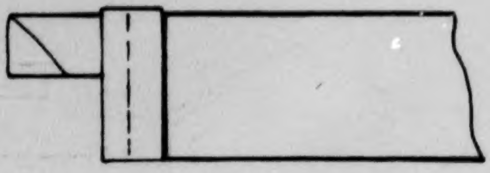


J. Place blanket on top of sheet with upper edge six inches from top edge of mattress (Figure 8)

FIGURE 8

K. Fold top of sheet down over top of blanket (Figure 9)

FIGURE 9



L. Place spread on bed even with top edge of mattress

M. Tuck top sheet, blanket, and spread under mattress at foot of bed; miter corner, allowing sides to hang down

N. Move to the other side of bed to complete bedmaking

O. Fold linen to center of bed

P. Tuck bottom sheet smoothly under head of mattress, mitering top corner; tuck tightly under mattress along the side

Q. Grasp edge of rubber sheet, pulling it tight and tuck under mattress

R. Tuck cotton drawsheet under mattress in same manner

S. Straighten top sheet, blanket, and spread; move to foot of bed to tuck in top sheet, blanket, and spread

T. Miter corners together, letting sides hang free

U. Put case on pillow

V. Place pillow at head of bed with open end away from door

III. Procedure for open bed

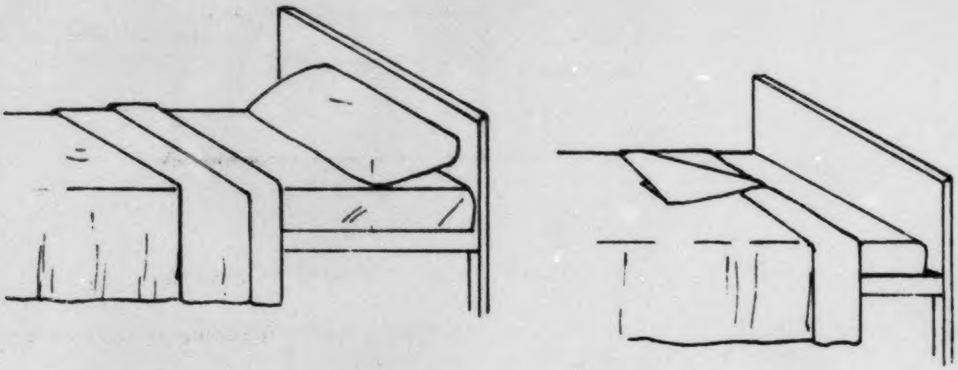
A. Proceed as for closed bed, steps A through V

B. Fold top of bedspread over top edge of blanket

C. Fold top edge of sheet down over top edge of blanket and folded spread

D. Fanfold or piefold top covers toward the foot of the bed (Figure 10)

FIGURE 10



E. Place pillow at head of bed with open edge away from door

JOB SHEET #27 -MAKE AN OCCUPIED BED

I. Equipment needed

   A. Sheet

   B. Drawsheet

   C. Spread

   D. Pillowcase

   E. Bath blanket

   F. Receptacle for soiled linen

II. Procedure

   A. Wash hands

   B. Select linen and take it to patient's unit; arrange in order of use and place on a chair

   C. Inform patient of procedure and provide privacy; adjust siderails if necessary

   (NOTE: Use good body mechanics throughout procedure; adjust height of bed to convenient working height.)

   D. Loosen top covers at foot of bed

   E. Place bath blanket and top covers over patient

   F. Have patient hold bath blanket or tuck it under his/her shoulders to keep in place

   G. Reach under bath blanket and fanfold top covers to foot of bed

   (CAUTION: Handle soiled linen with care to protect self, patient, and other patients.)

   H. Remove spread

   (NOTE: If spread is to be used again, fold it with the hems together, then fold in half, edges together, and in half again. Hang over back of chair. If spread is not to be used, place it in linen receptacle.)

   I. Remove blanket and fold in same manner as spread

   J. Remove top sheet and fold for reuse in same manner as spread was folded

K. Move mattress to head of bed

(NOTE: Ask patient to grasp the head of the bed, if able, to assist in moving mattress. If patient is unable to assist, request assistance from a co-worker.)

L. Assist patient to turn to opposite side of bed, away from side to be made first; adjust siderails if necessary

M. Loosen linens on side to be made, folding or rolling each piece separately and as close to patient as possible

N. Straighten mattress pad

O. Put bottom sheet on mattress, raw edge to mattress, with center fold near center of bed; tuck under mattress making mitered corner at top

P. Fanfold other half of sheet and tuck it as close to patient as possible

Q. Unfold rubber sheet, straighten, and pull tight; tuck under mattress

R. Unfold drawsheet, leaving it folded in half from top to bottom; place center fold near center of bed; tuck one side under mattress

S. Fanfold other half of drawsheet close to patient

T. Move patient to clean side of bed; adjust bath blanket to keep patient covered; adjust siderails if necessary

U. Move to other side of bed; remove soiled linen

V. Tuck in clean linen snugly and in proper sequence

W. Move patient to center of bed

X. Unfold top sheet over bath blanket

Y. Remove bath blanket, fold, and put away

Z. Place blanket and spread over patient

AA. Tuck linens in at foot of bed, making mitered corners as in unoccupied bed

BB. Loosen bed covers over patient's feet by grasping covers over toes and pulling them up gently

CC. Adjust siderails if necessary

DD. Position patient's communication device within reach

EE. Remove soiled linen

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #28-MAKE A POSTOPERATIVE BED

I. Equipment needed

   A. Clean linen as for an unoccupied bed

   B. Waterproof and cotton drawsheets or other bed protector

   C. Waterproof pillowcase

   D. Bath blanket

   E. For bedside table

      1. Two emesis basins

      2. Tongue depressors

      3. Mouth wipes

      4. Writing pad and pencil

      5. Receptacle for soiled wipes

      6. Stethoscope

      7. Sphygmomanometer

      8. IV standard

II. Procedure

   A. Strip bed and turn mattress if indicated

   B. Put on bottom sheet, waterproof drawsheet, and cotton drawsheet in usual manner

   C. Place second waterproof drawsheet and cotton drawsheet or other bed protector across upper part of mattress so it overlaps first drawsheet if indicated

   D. Place top sheet, blanket, and spread on bed in the usual way, except do not tuck them in at the foot

   E. Make cuff of top bedding in the usual way

   F. Fold back top bedding at the foot even with the mattress

   G. Fold back top of bedding even with mattress on side of bed where stretcher can be placed most conviently and fanfold to opposite side of bed

H. Place plastic pillowcase and cotton pillowcase on pillow

I. Stand pillow on its side at head of bed

J. Take everything, including water glass and pitcher, off the bedside table

K. Arrange emesis basin, tongue depressors, mouth wipes, paper, and pencil conveniently

L. Place waste receptacle and IV standard near bedside

M. Clear pathway for stretcher

(NOTE: Each insititution will have its own procedure for making a post-operative bed.)

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #29--POSITION THE PATIENT

I. Equipment needed

A. Bed, made as for an occupied bed

B. Pillows, as needed

C. Footrest or footboard

D. Extra linens, such as towels or bath blankets to use for support

E. Sandbags, as needed

F. Handrolls

II. Procedure

A. Horizontal recumbent or supine positions (Figure 1)

1. Place pillow under shoulder and head

2. Place folded towel or small, firm pillow under lower back

(NOTE: Pillow is placed under natural curve of patient's back. Check by putting hand under patient's back to determine placement.)

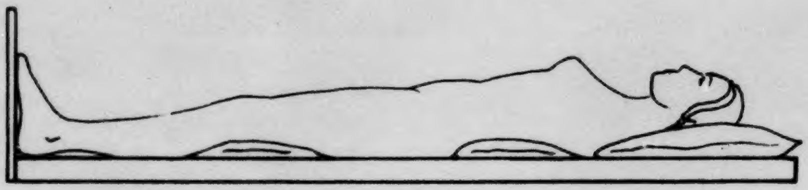
3. Maintain slight flexion of knees by putting folded towels or other linen under thighs just superior to the popliteal space

4. Support feet with footrest or covered box to prevent plantar flexion

5. If necessary, use rolled towels or sandbags at lateral aspects of thighs to prevent outward rotation of the legs

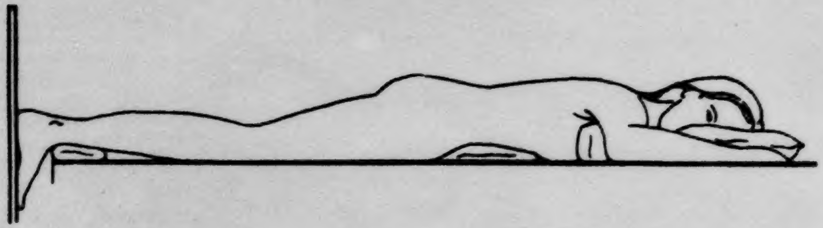
6. Check that bedcovers over feet are loosened to prevent plantar flexion when footrest is not used

FIGURE 1



7. Use handrolls and support arms with pillows, as needed, to prevent contractures

FIGURE 2



B. Prone position (Figure 2)

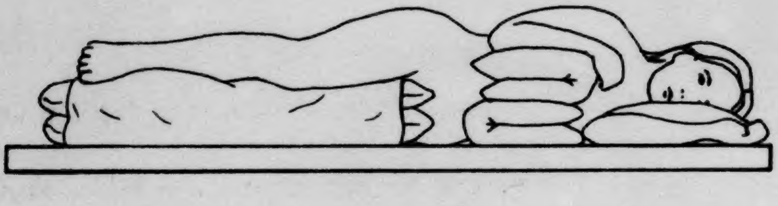
1. Move patient to one side of bed
2. Turn patient onto side facing center of bed
3. Place small pillow below breasts for female patient; place small pillow under lower abdomen for male patient
4. Turn patient onto abdomen
5. Position arms; arm at back of head lies parallel to body with elbow flexed slightly; arm at face side is flexed at right angle
6. Place small pillow under patient's head, if desired
7. Place pillow under ankles to keep weight of legs off toes

   (NOTE: Patient may be positioned so feet hang off edge of mattress. Use small folded linen under ankles to relieve strain.)

C. Lateral position (Figure 3)

1. Turn patient onto side and move near center of bed
2. Fold a pillow lengthwise and tuck along patient's back to keep patient from rolling backward
3. Place small pillow under patient's head
4. Flex upper leg to comfortable position; leave lower leg straight or flex slightly as desired for comfort
5. Place folded blanket or firm pillow under upper leg and foot
6. Flex lower arm at right angle at shoulder and elbow
7. Place folded pillow under upper arm

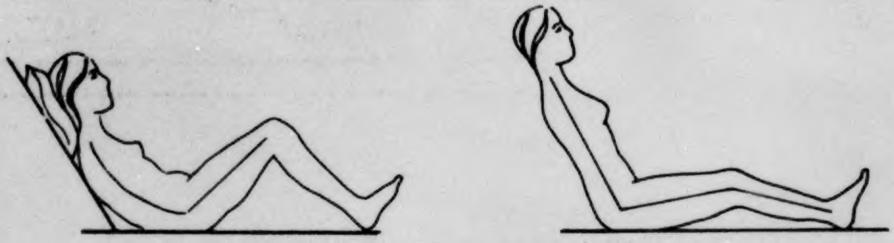
FIGURE 3



D. Fowler's position (Figure 4)

1. Place patient in supine position
2. Check to see that bend of hips is at bend of mattress

FIGURE 4



3. Elevate head of bed between 15° and 60°

4. Place body parts in good alignment

5. Provide support for body parts

   (NOTE: Use knee rest, footboard, trochanter rolls, sandbags, and/or pillows to support and maintain position.)

6. Bedcovers over feet should be loose if footrest is not used

E. Sims' or semi-prone (Figure 5)

1. Turn patient on side

2. Place small pillow under head

3. Align body in good position

   a. Head, neck, and back shoulder must be in a straight line

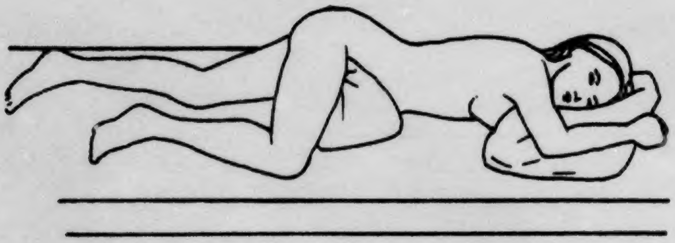
   b. Support and lift lower shoulder and flex lower arm behind patient

   c. Flex lower leg slightly

4. Flex uppermost leg and support with pillow under knee, lower leg, and ankle

5. Flex upper arm and support with pillow, as needed

FIGURE 5



F. Knee-chest position (Figure 6)

1. Turn patient onto abdomen

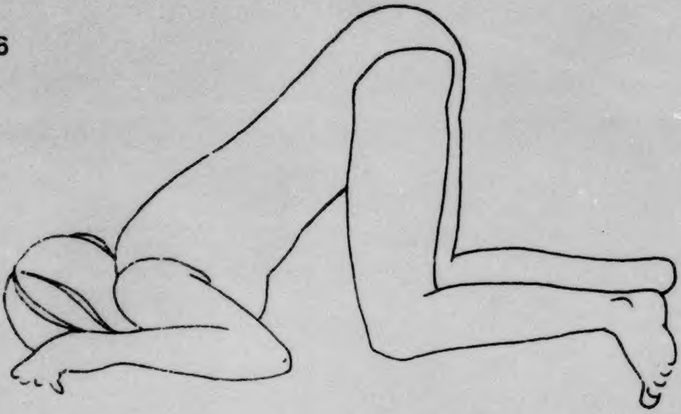
2. Replace top covers with bath blanket

3. Fanfold, keeping top covers down with lower legs covered

4. Help patient into kneeling position with chest and head resting on bed

5. Tuck bath blanket around patient's thighs leaving center free to be raised during examination

FIGURE 6



G. Lithotomy (Figure 7)

1. Place patient in supine position

2. Replace top covers with bath blanket

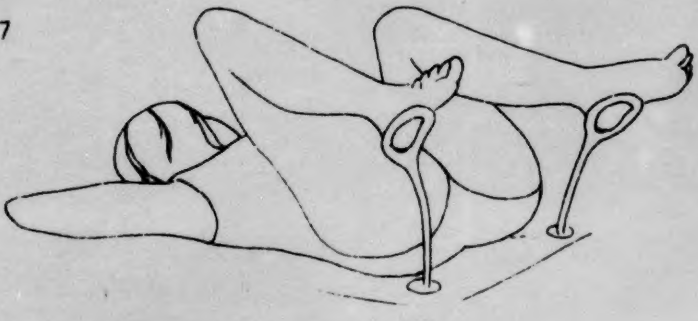
3. Flex patient's hips while abducting them

4. Flex knees acutely

5. Tuck bath blanket corners around patient's feet and legs leaving center free to be raised during examination

   (NOTE: If position is to be maintained for any length of time, it may be necessary for two people to support patient's legs in the proper position.)

FIGURE 7



HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #30-GIVE A COMPLETE BED BATH

I. Equipment needed

   A. Bed linen

   B. Bath blanket or cover

   C. Bath basin with water 39.3°C (105°F) to 46.1°C (115°F)

   D. Soap and soap dish

   E. Washcloth

   F. Face towel

   G. Bath towel

   H. Gown

   I. Lotion

   J. Equipment for mouth care

   K. Equipment for nail care

   L. Brush and comb

   M. Linen receptacle

   N. Damp cloth

   O. Waste receptacle

   P. Sign for door

II. Procedure

   A. Check room temperature

   (NOTE: Temperature should be 23.9°C (75°F) to 26.7°C (80°F) and room should be free of drafts.)

   B. Put sign on door of patient's room

   C. Identify patient and explain procedure

   D. Provide privacy

   E. Offer bedpan or urinal

   F. Wash your hands

G. Assemble equipment needed and take to bedside; arrange linen in order of use

H. Assist with mouth care; assist with shaving as needed

I. Lower backrest and side rails; if two pillows are being used, remove one

J. Loosen top bedding, remove spread and blanket; fold and place them on back of chair

K. Place bath blanket over top sheet; have patient hold on to top edge while sheet is fanfolded to end of bed and removed

L. Fold sheet and place on back of chair

M. Remove patient's gown or pajamas; have patient move to side of bed toward you

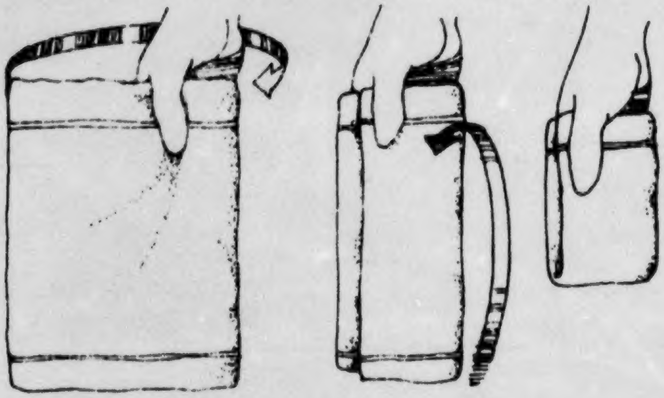
N. Give bath

1. Face, neck, and ears

   a. Place face towel across upper edge of bath blanket

   b. Fold washcloth around hand to form a mitten (Figure 1)

FIGURE 1



Used by permission of W. B. Saunders Co., from *Modern Bedside Nursing* by Vivian M. Culver, 7th ed., copyright 1969, p. 802.

   c. Wash eyes with washcloth, cleansing from inner corner to outside using separate part of cloth for each eye and dry with towel

   (NOTE: Do not use a soapy cloth.)

   d. Wash face, neck, and ears; rinse and dry with face towel

   (NOTE: Have patient wash face, neck, and ears if condition permits.)

2. Arms
    a. Expose only one arm at a time; place bath towel under arm farthest from you
    b. Wash arm with soapy washcloth; rinse and dry, giving special care to axilla
    c. Repeat procedure on other arm
    d. Have patient place hands in bath basin and wash and dry them well
    e. Clean and file nails, if necessary
3. Chest and abdomen
    a. Place bath towel across chest
    b. Fold bath blanket to waist; wash chest and breasts under towel, rinse, and dry well

       (NOTE: Pay special attention to women with pendulous breasts.)
    c. Turn bath towel lengthwise to cover chest and abdomen; fold blanket to pubic area; wash, rinse, and dry abdomen
    d. Replace bath towel with bath blanket
4. Legs
    a. Drape patient with bath blanket exposing lower leg and thigh farthest from you

       (NOTE: Do not reach across a clean area.)
    b. Place bath towel lengthwise under leg
    c. Wash, rinse, and dry leg
    d. Place basin on towel and put patient's foot in basin; wash well between toes and dry thoroughly
    e. Repeat procedure on other leg, thigh, and foot
5. Change water
6. Back
    a. Turn patient on side or abdomen
    b. Fold blanket so that back and buttocks are exposed
    c. Place bath towel on bed along patient's back

    - d. Bathe, rinse, and dry back
    - e. Bathe, rinse, and dry buttocks
    - f. Rub back with lotion, giving special care to reddened areas over bony prominences
  - 7. Completing bath
    - a. Instruct patient to wash genital area
    - b. Place basin within reach of patient

      (NOTE: If patient is unable to finish bath, health assistant will wash genital area.)

- O. Assist patient in dressing and grooming
  - 1. Put on clean gown or pajamas
  - 2. Place a hand towel over pillow and comb hair for helpless patient
  - 3. Assist patient as needed with cosmetics
- P. Care for patient's environment
  - 1. Empty bath basin; clean and return all bathing equipment to bedside stand
  - 2. Change bed linens
  - 3. Replace clean towels and washcloth
  - 4. Place communication device and bedside stand within reach of patient
  - 5. Place waste receptacle conveniently
  - 6. Damp dust overbed, table, and bedside cabinet
  - 7. Discard soiled linen
  - 8. Remove sign from door
- Q. Wash hands
- R. Report and record care and observations

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #31--ASSIST WITH OR GIVE A PARTIAL BATH

I. Equipment needed

   A. Basin with warm water between 39.3°C (105°F) and 46.1°C (115°F)

   B. Equipment for mouth care

   C. Toilet articles, including appropriate shaving equipment

   D. Lotion

   E. Soap and soap dish

   F. Washcloth and towel

   G. Bath blanket or cover

   H. Linen for bed change

   I. Linen receptacle

   J. Damp cloth

   K. Waste receptacle

   L. Sign for door

II. Procedure

   A. Check room temperature

   (NOTE: Temperature should be 23.9°C (75°F) to 26.7°C (30°F) and room should be free of drafts.)

   B. Put sign on door of patient's room

   C. Identify patient and explain procedure

   D. Provide privacy

   E. Wash hands

   F. Offer bedpan or urinal

   G. Wash hands

   H. Assemble equipment and take to bedside

   I. Remove top bedding and replace with bath blanket; remove patient's gown

J. Give patient ample time to bathe

K. Bathe legs if patient is unable to do so

L. Obtain clean water; wash back and buttocks

M. Give back rub

N. Assist patient in dressing and grooming

(NOTE: If permitted, assist patient to sit in chair while bed is being made.)

O. Care for patient's environment

1. Change bed linens
2. Leave all desired articles within reach of patient
3. Place communication device within convenient reach of patient
4. Clean and dry utensils and return to bedside stand
5. Replenish towels and washcloth
6. Place waste receptacle conveniently
7. Damp dust patient's unit
8. Remove sign from door

P. Wash hands

Q. Report and record care and observations

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #32--ASSIST WITH A TUB BATH OR SHOWER

I. Equipment needed

- A. Face towel
- B. Two bath towels
- C. Washcloth
- D. Dish with soap
- E. Nonskid bath mat
- F. Bath mat
- G. Bath blanket or cover
- H. Gown, robe, slippers, and shower cap, if needed
- I. Bath thermometer
- J. Lotion and deodorant
- K. Chair or stool
- L. Sign for bathroom door

II. Procedure

- A. Prepare bathroom and assemble equipment
  1. Have bathroom warm, but well-ventilated for comfort and safety
  2. Clean bathtub or shower thoroughly
  3. Place nonskid bath mat in tub or shower
  4. Fill tub about half full of water 35°C (95°F) to 39.3°C (105°F) or adjust shower water flow

     (NOTE: If no bath thermometer is available, test water temperature with elbow; water should be tepid.)
  5. Place bath mat on floor beside tub or shower
  6. Place sign on bathroom door

B. Prepare patient

1. Escort patient to bathroom
2. Explain communication device
3. Help patient undress, if necessary
4. Instruct patient to leave bathroom door unlocked

C. Assist patient with bath or shower

1. Assist patient into tub or shower
2. Wash back and/or assist, as indicated
3. Observe patient for any unusual symptoms

   (NOTE: Check patient frequently if left in bathroom alone. Patient's bed could be made at this time if it is close to the bathroom.)

4. Do not leave patient in tub or shower longer than eight to ten minutes without doctor's permission

D. Place opened bath blanket on chair or stool beside tub

E. Allow water to run out of tub or shut off shower water flow

F. Assist patient out of tub or shower

1. Seat patient on stool; wrap bath blanket around lower part of body
2. Dry skin by brisk use of towel, or firm patting motion if patient's skin is dehydrated, loose, and dry

G. Help patient dress

1. Help patient into fresh dry clothing
2. Return patient to unit and help into clean bed

H. Check bathroom

1. Place towels, washcloth, and bath mat in hamper
2. Clean tub or shower thoroughly
3. Ventilate room

    4. Leave bathroom tidy
    5. Remove sign from door

I. Care for patient's environment

    1. Leave all desired articles within reach of patient
    2. Place communication device within convenient reach of patient
    3. Place clean towels and washcloth in bedside table
    4. Damp dust patient's unit
    5. Place waste receptacle conveniently

J. Wash hands

K. Report observations to supervisor

L. Report and record care and observations

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET#33-ASSIST WITH SITZ BATH

I. Equipment needed

- A. Portable sitz chair, disposable sitz bath, sitz tub, or bathtub (See Figures 1 and 2)
- B. Small blanket
- C. Bath towels
- D. Large pitcher
- E. Bath thermometer

II. Procedure

- A. Prepare bathroom and solution
    1. Prevent drafts by closing windows in room
    2. Fill sitz bath with water
    3. Check to see that temperature of water is approximately 40°C-43°C (105°F to 110°F)
    4. Place towel in tub for patient to sit on
- B. Identify patient and explain procedure
- C. Assist patient into sitz chair or tub

  (NOTE: If disposable sitz bath is used, seat patient on commode into which sitz bath is placed.)

    1. Regulate flow of solution from suspended reservoir
    2. Refill reservoir as needed
- D. Place towel over thighs; drape bath blanket about patient if chilly
- E. Continue treatment for specified time, usually fifteen to twenty minutes
- F. Stay with patient during treatment

  (CAUTION: Observe patient closely; the effect of heat on a relative large portion of the body may cause weakness or vertigo.)
- G. Assist patient from sitz chair or tub

H. Dry and assist patient in dressing and returning to bed

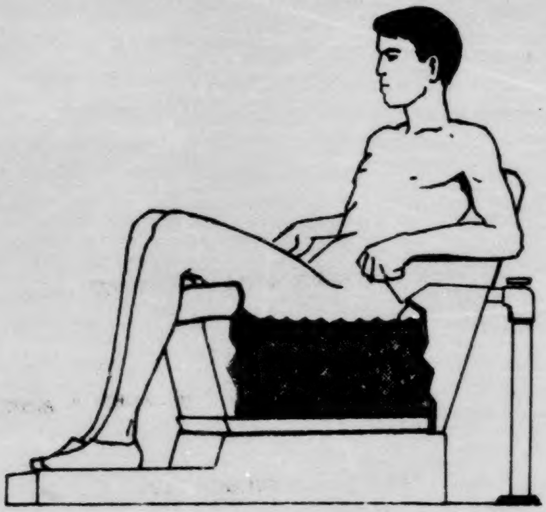
I. Provide for patient's comfort; place communication device conveniently

J. Clean bath area

K. Wash hands

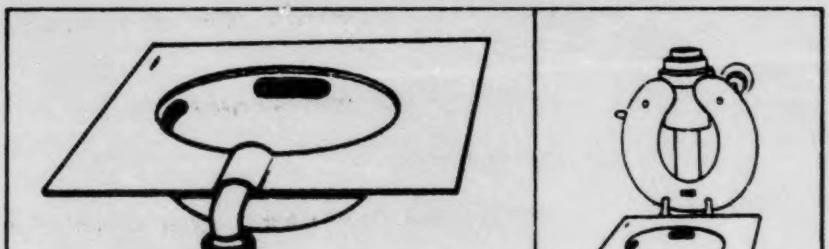
L. Report and record duration of treatment and observations

FIGURE 1



Used by permission of Robert J. Brady Co., from Training the Nursing Aide by HRET, 4th edition, copyright 1969, p 9-25.

FIGURE 2



HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #34-GIVE CATHETER CARE

(NOTE: A urinary catheter is a foreign object to the body and many times a pathway for microorganisms to enter the urinary tract causing infection. To avoid this problem, catheter care is usually given twice a day.

I. Equipment

  A. Wash cloth and towel

  B. Soap

  C. Gloves

  D. Solution

  (NOTE: Each institution will have its own accepted antiseptic solution to cleanse the catheter. This may be followed by an application of an antibiotic or antiseptic ointment.)

  E. Tape (adhesive or paper)

II. Procedure

  A. Wash hands

  B. Assemble equipment at bedside

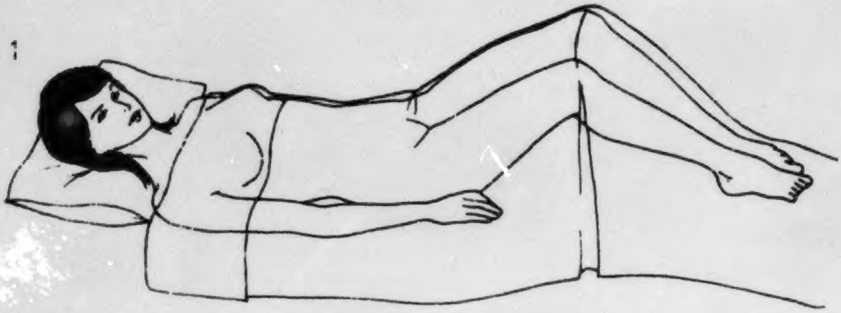
  C. Identify patient and explain procedure

  D. Provide privacy

  E. Place patient in position; spread bath blanket over patient and fold top covers to bottom of bed

  (NOTE: Females may assume a dorsal recumbent position [Figure 1] and males may remain on back or side.)

FIGURE 1



F. Prepare wash cloth using warm water and small amount of mild soap

G. Cleanse area around meatus where catheter enters using downward strokes; be careful not to bring cloth back up over clean areas

(NOTE: Labia on female patients need to be gently spread open and cleansed well. It may also be possible to do perineal care at this time.)

H. Rinse area and pat dry

I. Apply solution around the catheter tubing beginning with area close to entrance of body; cleanse approximately 10.16 cm (4 in) on tubing

J. Apply ointment, if necessary

K. Check to see if tape used to secure tubing to patient's leg is soiled or not secure; remove tape and clean tubing, if necessary; secure with fresh tape

L. Observe the catheter collecting bag and the characteristics of the urine as it may be time to change the tubing or bag

M. Return patient to a comfortable position, replacing top linens and removing bath blanket

N. Dispose of equipment properly

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #35 GIVE CARE TO AN INCONTINENT PATIENT

I. Equipment needed

- A. Bed linen, as needed
- B. Bath blanket or cover
- C. Bath towels
- D. Washcloths
- E. Bedpan
- F. Toilet tissue
- G. Incontinent pads
- H. Gown or pajamas
- I. Disposable plastic bag

II. Procedure

- A. Wash hands
- B. Assemble equipment
- C. Identify patient and explain procedure
- D. Provide privacy
- E. Replace top bedding with bath blanket or cover
- F. Remove patient's gown or pajamas
- G. Turn patient on side, fold back bath blanket exposing area to be washed
- H. Remove soiled pad and place in disposable plastic bag
- I. Loosen drawsheet from under mattress, if wet or soiled, and tuck toward patient, keeping soiled part inside
- J. Wipe anal area with tissue and place in plastic bag
- K Wash and dry buttocks, thighs, and genital area

L. Rub back and buttocks with lotion

(NOTE: This improves circulation, protects the skin, and prevents pressure areas.)

M. Change bed linens

1. Change drawsheet
2. Place incontinent pad under buttocks
3. Have patient turn onto clean side of bed and go to other side of bed
4. Remove soiled drawsheet, straighten out incontinent pad, and tuck clean drawsheet under mattress

N. Complete care of patient

1. Put on gown or pajamas
2. Straighten top bedding and remove bath blanket
3. Place patient in comfortable position

O. Straighten unit

1. Empty bath basin
2. Discard soiled linen

   (NOTE: Care of soiled linen will depend on particular institutional policy; the supervisor can provide this information.)

P. Wash hands

Q. Record care and observations

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #36--CLEAN AN EXAMINATION OR TREATMENT ROOM

I. Tools and equipment required:

A. Container for soiled linen

B. Receptacle for waste paper

C. Cleaning cloths

D. Furniture wax

E. Non-scratching cleanser

F. Water with detergent

G. Clean linen

II. Procedures

A. Check room for articles left by patient.

B. Remove and store items not needed in room.

C. Place waste paper materials in receptacle for waste paper.

D. Place soiled linen in linen hamper.

E. Replace with clean linen.

F. Return all used instruments to utility room for cleaning.

G. Use cleaning cloth and detergent solution to clean any furniture, treatment table, or floor that is soiled, before using room again.

H. Check room between patients to be sure it is completely clean and uncluttered.

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #37 -TAKE ORAL TEMPERATURE

I. Equipment needed

  A. Mercury-type thermometer and holder with antiseptic solution or electronic thermometer with plastic sheaths

  B. Watch with second hand

  C. Paper and pencil

  D. Clean tissue

II. Procedure for mercury-type thermometer

  A. Wash hands

  B. Assemble equipment and take to bedside

  C. Identify patient and explain procedure

  (CAUTION: Do not take temperature if patient has recently taken hot or cold drink or is smoking.)

  D. Remove thermometer from container, holding near the end opposite mercury bulb; shake mercury down to 95°F or below

  E. Place mercury bulb under patient's tongue; ask patient to keep lips closed without biting thermometer; leave thermometer in place for three minutes; remain with patient if necessary

  (NOTE: Pulse and respirations may be counted at this time.)

  F. Remove and wipe thermometer with tissue from stem to bulb; discard tissue

  G. Read thermometer and record reading on paper immediately

  H. Recheck temperature, if indicated

  I. Care for thermometer

    1. Shake mercury down

    2. Clean thermometer starting from the top and work downward using a twisting motion and place thermometer in holder

    (NOTE: Use institution's procedure for cleaning thermometer.)

    3. Replace equipment in designated area

J. Wash hands

K. Record temperature

L. Report unusual temperature to supervisor

III. Procedure for electric thermometer

A. Wash hands

B. Assemble equipment

C. Activate electric thermometer according to instructions

D. Put on clean protective sheath

E. Place tip of probe under patient's tongue for required length of time and record temperature on paper

F. Discard protective sheath

G. Recheck temperature, if indicated

H. Replace equipment in designated area

I. Wash hands

J. Report unusually high or low temperature to supervisor

K. Record temperature

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #38-TAKE RECTAL TEMPERATURE

I. Equipment needed

   A. Container with clean rectal thermometer

   B. Clean tissue

   C. Lubricant

   D. Paper and pen

   E. Watch with second hand

II. Procedure

   A. Wash hands

   B. Assemble equipment

   C. Identify patient and explain procedure

   D. Provide privacy

   E. Position patient

      1. Place adult patient on side and flex upper knee

      2. Place child on abdomen with face to side unless physical condition makes this inadvisable

   F. Expose rectal area

   G. Raise upper buttock so anus is clearly seen and insert lubricated bulb gently into rectum about 3.5 cm (1 1/2 inches) in adult

   (NOTE: Rectal thermometer in children and infants should be inserted approximately 1/2 - 1 inches.)

   H. HOLD thermometer in place for three to five minutes

   (CAUTION: Do not leave patient while rectal temperature is being taken. If the patient moves and the thermometer is not being held, it can slip inside and injure the rectum or require surgical removal.)

   I. Remove thermometer; wipe with clean tissue from stem to bulb; discard tissue

   J. Read thermometer

K. Wash thermometer in cool water; replace in holder

L. Wash hands

M. Record temperature reading on paper

N. Make patient comfortable

O. Wash hands

P. Record temperature and report any significant elevation; indicate on record that temperature was taken rectally (R)

(NOTE: When electric thermometer is used, follow manufacturer's instructions.)

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET#39 -TAKE AXILLARY TEMPERATURE

I. Equipment needed

- A. Clean thermometer
- B. Thermometer holder
- C. Watch with second hand
- D. Paper and pen

II. Procedure

- A. Wash hands
- B. Assemble equipment and take to bedside
- C. Identify patient and explain procedure
- D. Position patient comfortably, be sure axilla is dry

  (NOTE: If axilla is wet, pat dry. Excessive rubbing will generate heat.)

- E. Place thermometer in axilla
  - 1. Leave thermometer in place for ten minutes
  - 2. Have patient hold arm tightly against chest
- F. Remove thermometer, wipe, read, and record temperature immediately on paper indicating temperature was taken in the axilla (ax)
- G. Leave patient in a comfortable position
- H. Clean thermometer and return equipment to designated area
- I. Wash hands
- J. Record temperature on form provided remembering to put (ax) above temperature; report any significant elevation

  (NOTE: When electric thermometer is used, follow manufacturer's instructions.)

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #40–TAKE PULSE AND RESPIRATIONS

I. Equipment needed

   A. Watch with second hand

   B. Pad and pencil

II. Procedure

   A. Wash hands

   B. Assemble equipment and take to bedside

   C. Identify patient and explain procedure

   D. Place patient's arm across chest

   E Place tips of first two fingers over radial artery on thumb side of wrist exerting slight pressure

   (NOTE: Do not use thumb.)

   F. Count for one minute with second hand of watch when pulse is felt

   G. Count respirations, after pulse count and while still holding wrist

   H. Record immediately on paper

   I. Wash hands

   J. Report pulse or respirations and any unusual observations

   K. Record on form provided

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET#41-TAKE APICAL/RADIAL PULSE

I. Equipment needed

A. Stethoscope

B. Watch with second hand

C. Paper and pen

II. Procedure (requires two persons counting simultaneously)

A. Wash hands

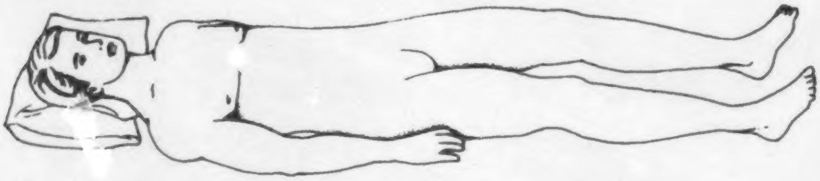
B. Assemble equipment

C. Identify patient and explain procedure

D. Provide privacy

E. Uncover left side of chest with patient in supine position

FIGURE 1



Supine Position

F. First person

1. Locates apex of heart by placing fingertips on patient's chest below left nipple about the fifth intercostal space

2. Inserts ear pieces of stethoscope in ears, places bell over apical region, and listens for heart sounds

3. Counts the beats for one full minute on signal; notes rate, rhythm, and strength of beat

G. On signal, second person counts radial pulse

H. Record on paper immediately

   1. Radial pulse rate, rhythm, and strength

   2. Apical pulse rate, rhythm, and strength

   3. Pulse deficit

   (NOTE: Apical pulse only is sometimes taken for certain procedures.)

I. Make patient comfortable

J. Clean and return equipment to designated area

K. Wash hands

L. Report and record procedure and observations on form provided

HEALTH CARE PROCEDURES
UNIT XVI

*JOB SHEET #42 - SET UP STERILE TRAYS

Equipment and supplies:	Tray Sterile towel Sterile basin Sterile cotton balls Sterile gauze Sterile dressings Antiseptic solution Forceps in chemical sterilizer

Procedure:

1. Check doctor's order. Check patient to determine what dressings will be needed.

Note: Never remove or change a dressing without a doctor's order.

2. Wash hands. Assemble all equipment.

3. Check the date and indicator tape on all pieces of equipment or supplies for sterility.

4. Place the tray on a flat surface.

Note: Make sure the work area is clean and dry and that there is sufficient room to work.

5. Open the sterile towel wrapper by the correct procedure. Place the wrapper away from the work area. Hold only the outside of the towel. Allow it to open by releasing the fanfolds. Place the towel with the outside down (side you have touched down) on the tray. The untouched or sterile side will be facing up. Holding onto the outside (down side) of the towel, fanfold the back of the towel so it can be used later to cover the supplies.

   Caution: Do not reach across the top of the towel. Reach in from either side.

   Caution: At all times, make sure that you do not touch the sterile side of the towel. Avoid letting the towel come in contact with uniform, other objects, etc.

6. Unwrap the basin correctly and place it on one side of the tray. Do not place it closer than one inch to the edge of the towel. Make sure that the wrapper does not touch the towel while placing the basin in position.

   Note: One inch on the outisde edge of the towel is considered to be contaminated. Thus no equipment should come in contact with this border.

7. Unwrap the necessary number of cotton balls correctly. Place them in the basin with a dropping motion. Do not touch the basin with the wrapper.

8. Unwrap the outer layer of dressing. Use the sterile forceps to remove it from the package and place it on the tray. Make sure the dressing is not too close to the edge of the towel.

   Note: The outside dressing is placed on the tray first. In this way, the supplies will be in the order of use.

   Note: The forceps must be lifted straight up out of the container and must not touch the side of the container. Keep the tips pointed down and above the waist at all times. Shake off excess liquid.

9. Unwrap the inner dressings correctly. Place them on the sterile towel with the sterile forceps. Place them on top of the outer dressings.

   Note: Dressings are now in a pile with the dressing to be used first on the top of the pile.

10. Open the correct antiseptic solution. Place the cap with the top down on the table. (The open edge or inside of the cap is facing up.) Pour a small amount of the solution into the sink to clean the lip of the bottle. Hold the solution over the basin and pour a sufficient amount into the basin.

    Caution: Make sure that no part of the solution bottle touches the basin or sterile tray. Pour carefully to avoid splashing of solution. If the tray gets wet, the entire tray is contaminated and you must begin again.

11. Check the tray to make sure all needed equipment is available.

12. Pick up the fanfolded edge of the towel by placing one hand on each side edge of the towel on the underside or contaminated side. Do not touch the sterile side. Keep your hands and arms to the side of the tray, and bring the towel forward to cover the supplies.

    Cuation: Never reach across the top of the sterile tray.

13. Once the tray is ready, NEVER allow it out of your sight. Take it to the room and use it immediately. If you need more equipment, you must take the tray with you. This is the only way that you can be completely positive that the tray is not contaminated.

Checkpoint

*Reprinted with permission of Louise M. Simmers, from Diversified Health Occupations to be published by Delmar Publishers, Inc., in 1983.

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET#43--USE A NASAL CANNULA

I. Equipment

A. Oxygen setup

(NOTE: Prepare oxygen setup using instructions on Job Sheet #1 or #2.)

B. Nasal cannula

II. Procedure

A. Check physician's order for details

B. Wash hands

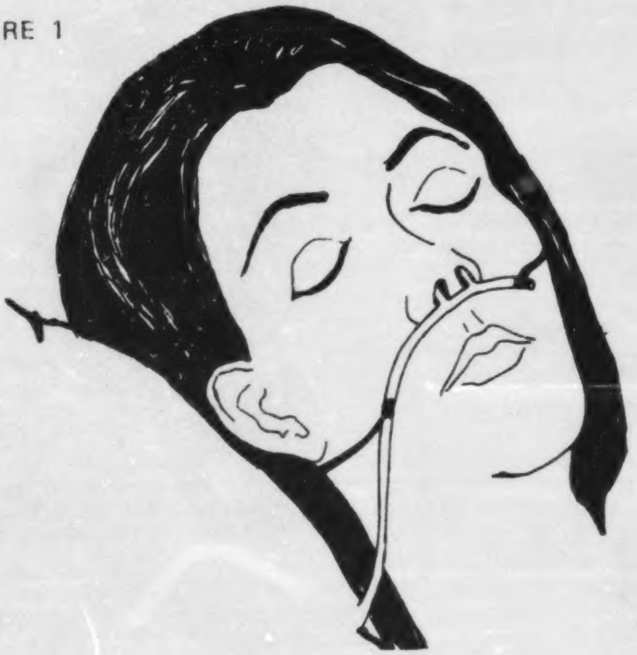
C. Assemble equipment and take to patient's unit

D. Identify patient and explain procedure

E. Start flow of oxygen at about three liters

F. Apply nasal cannula and adjust for patient's comfort (Figure 1)

FIGURE 1



Nasal Cannula

G. Adjust rate of flow to prescribed number of liters per minute

H. Check frequently for

  1. Cannula position
  2. Rate of oxygen flow
  3. Water level in humidifier
  4. Patency of tubing
  5. Leaks in connections
  6. Quantity of oxygen remaining in cylinders

I. Remove and clean cannula at least once every eight hours

J. Record and report

  1. Time
  2. Rate of flow
  3. Patient response

K. Discontinue use

  1. Remove nasal cannula
  2. Shut off oxygen supply
  3. Clean and return equipment to proper place

L. Record time oxygen is discontinued

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #44--APPLYING MOIST HEAT - HOT SOAKS

I. Tools and equipment required

   A. Basin or tub

   B. Solution, as ordered, in container

   C. Bath thermometer

   D. Two bath towels or blankets

   E. Plastic sheet

II. Procedures

   A. Assemble equipment.

   B. Screen the unit.

   C. Greet patient and explain procedure.

   D. Place the plastic sheet under the basin.

   E. Fill the soak basin less than half full.

   F. Test the water temperature and correct if necessary. (Should be 110°F)

   G. Slowly introduce into the solution the body part to be soaked.

   H. Cover the soaking part with the bath towel or blanket.

   I. Check the time

   J. Allow the part to soak for the time ordered.

   K. Watch the skin of the soaked area.

   L. Watch the general reaction of the patient.

   M. Remove the soaked part from the basin.

   N. Carefully dry the part.

   O. Clean and replace equipment according to hospital policy.

JOB SHEET #45 --APPLYING DRY HEAT - HOT WATER BAG

I. Tools and equipment required

A. Hot water bag

B. Container for hot water

C. Paper towels

D. Cover for bag

E. Thermometer

II. Procedures

A. Assemble and prepare equipment.

B. Fill container with water and test for correct temperature--120°F.

(NOTE: Do not test the temperature of running water. Draw the water into a container, then test. Half fill the bag with tested water. Too much water makes the bag heavy.)

C. Expel air by placing hot water bag horizontally on flat surface, holding neck of bag upright until water reaches neck, and apply the screw top when all air has been expelled.

D. Wipe hot water bag dry with paper towels and turn bag upside down to check for leakage.

E. Place cover on hot water bag.

F. Greet patient and explain procedure. Take equipment to bedside on tray.

G. Apply to the affected area as ordered, but never allow patient to lie on hot water bag.

H. Check patient's condition at intervals.

I. Record

1. Date and time

2. Procedure
3. Area of application
4. Duration of treatment
5. Patient's reaction
6. Observations

J. Clean and replace equipment according to hospital policy.

K. Repeat procedure as necessary.

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #46--APPLYING MOIST COLD TREATMENT - COLD COMPRESSES

I. Tools and equipment required

  A. Tray

  B. Large basin half filled with crushed ice

  C. Small basin with the ordered solution

  D. Protective pad

  E. Towel

  F. Rubber gloves, if needed

  G. Gauze compresses (a large number)

  H. Disposable bag

II. Procedure

  A. Assemble and prepare equipment.

  B. Greet patient and explain procedure.

  C. Place the protective pad under the area to be treated.

  D. Cover the pad with the towel.

  E. Position the area to be treated on the towel.

  F. Put on gloves.

  G. Put the gauze compresses into the solution.

  (Note: Ice is never put directly into a compress or soak solution, since a particle of ice can stick to the compress and get onto the skin.)

  H. Wring out some of the compresses as dry as possible.

  I. Stretch and place compresses on area to be treated.

  J. Remove compresses after a few minutes and discard into the disposable bag.

K. Report:

1. Date and time
2. Procedure
3. Area of application
4. Duration of treatment
5. Patient's reaction
6. Observations

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET#47 --APPLYING DRY COLD TREATMENT - ICE BAG

I. Tools and equipment required

A. Ice bag

B. Cover for bag

C. Ice chips

D. Spoon or similar utensil

E. Paper towels

II. Procedures

A. Assemble and prepare equipment.

B. Fill the bag half full of ice chips. More ice makes the bag too heavy.

C. Expel air by resting ice bag on table in horizontal position, with top in place but not screwed on. Squeeze the bag until air has been removed.

D. Screw top on securely.

E. Test for leakage.

F. Wipe dry with paper towel.

G. Put on the ice bag cover. Do not apply a bag without a cover.

H. Greet patient and explain procedure.

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET#48 ASSIST PATIENT TO DANGLE

(NOTE: This procedure is usually performed as the initial getting-up activity for a patient who has been ill or had surgery. Patient may be apprehensive and fearful of pain. Observe for signs of weakness or syncope.)

I. In classroom with another student playing the part of a patient, assist to dangle

II. Procedure

  A. Wash hands

  B. Identify patient and explain procedure

  C. Check pulse

  D. Move patient to side of bed; if there is an injury or weakness, work from side near the weakness

  E. Place bed in low position

  F. Elevate head of bed to help adjust patient to a sitting position

  G. Assist patient to upright position with your hands on shoulders

  H. Move other hand to opposite knee while continuing to support one shoulder with your hand and pivot patient with legs down over side of bed

  I. Provide for patient's comfort and warmth

    1. Put on slippers; place feet on footstool if patient's feet do not reach the floor

    2. Put robe on patient or cover shoulders and back with a bath blanket

    3. Place blanket over patient's legs

  J. Check pulse

  K. Watch closely for sign of weakness or fatigue

  L. Assist patient in returning to bed at end of specified period of dangling or sooner if patient is unable to tolerate procedure

    1. Remove robe and slippers

    2. Support patient's shoulders with one hand; with other hand under patient's ankles, swing legs up onto bed, pivoting body at the same time

3. Ease patient down to backrest

M. Check pulse

N. Provide for patient's comfort

    1. Adjust top covers
    2. Adjust bed position and pillows
    3. Place communication device within convenient reach of patient

O. Wash hands

P. Report and record procedure and observations

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #49--PUT ON AND REMOVE MASK AND GOWN

I. Equipment

A. Mask

B. Gown

C. Head covering

II. Procedure to put on mask and gown

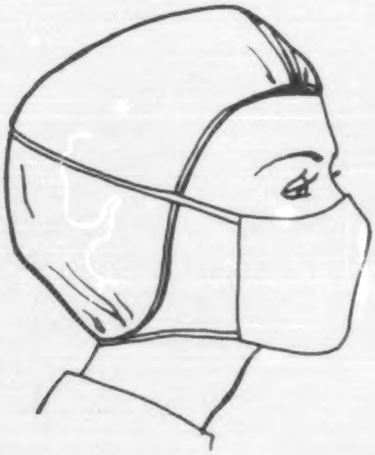
A. Wash hands

B. Put on head covering

C. Position mask over both nose and mouth (Figure 1)

(CAUTION: Check mask for fit and comfort. Face and mask must not be touched again after entering the isolation unit until you have washed your hands. Mask must be changed frequently according to type. If mask becomes wet, DISCARD.)

FIGURE 1

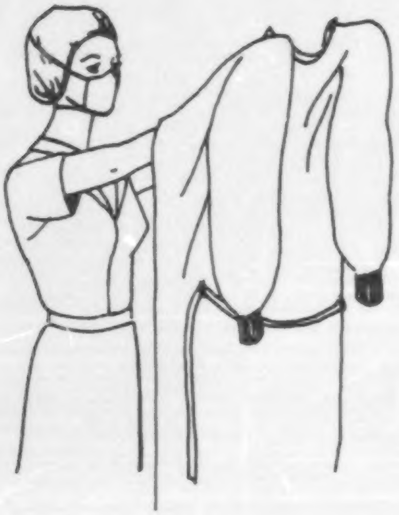


D. Put on gown

1. Pick up folded gown by the neckband and shake slightly to straighten

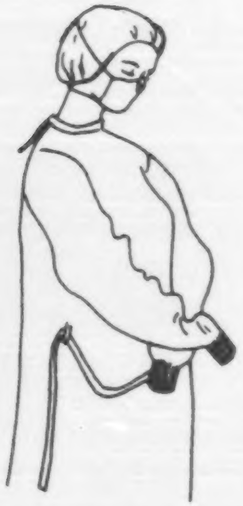
2. Slide gown onto arms by holding the arms forward and slightly above shoulder level (Figure 2)

FIGURE 2



3. Pull one sleeve on, using opposite hand inside second sleeve (Figure 3)

FIGURE 3



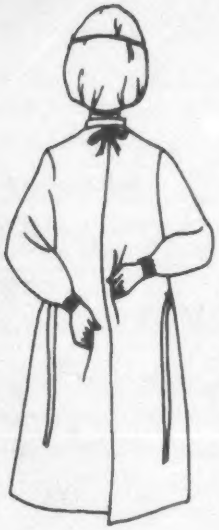
4. Pull on second sleeve

(CAUTION: Do not touch outside of gown with hands. If by accident you do touch outside of gown, wash your hands before fastening ties.)

5. Fasten gown at neck

6. Grasp gown at waistline and lap the right side over the left side (Figure 4)

FIGURE 4



7. Hold overlapped edge with right hand

8. Grasp left belt and pull it around to the back

9. Pick up right belt, draw into place, and tie belt

   (CAUTION: Your hands are now contaminated. Gown below shoulder level is always considered to be contaminated.)

III. Procedure to remove gown and mask

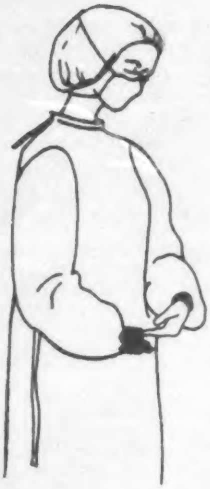
A. Untie belt

B. Wash and dry hands

C. Unfasten neck of gown

D. Pull off first sleeve by slipping fingers of other hand inside cuff (Figure 5)

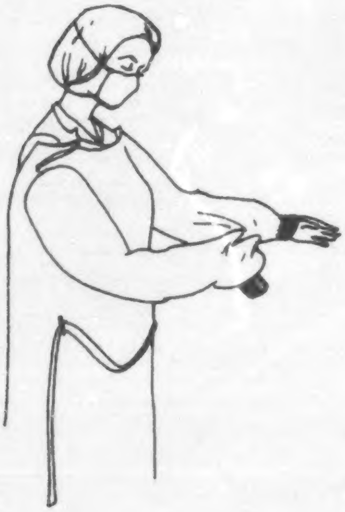
FIGURE 5



(CAUTION: Do not touch outside of cuff. The outside is contaminated; the inside of cuffs and hands are clean.)

E. Grasp second sleeve with hand inside first sleeve (Figure 6)

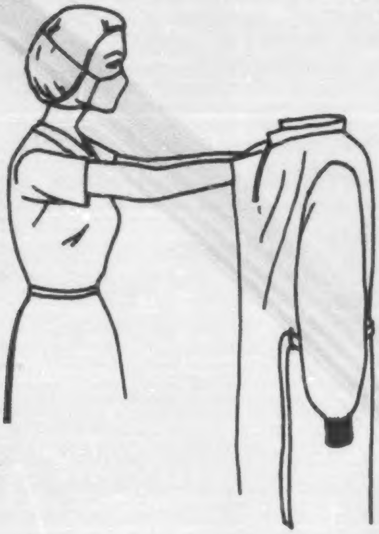
FIGURE 6



F. Pull off second sleeve

G. Fold gown without touching outer surface of gown by bringing shoulder seams together; hold gown away from your uniform (Figure 7)

FIGURE 7



H. Dispose of paper gowns properly and place soiled cloth gown in soiled linen receptacle

I. Wash hands

J. Remove and discard mask and head covering

K. Wash hands

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #50-COLLECT A URINE SPECIMEN

I. Equipment needed

   A. Bedpan or urinal

   B. Covered specimen container

   C. Label

   D. Requisition Slip from Laboratory

   E. Graduate

II. Procedure

   A. Wash hands

   B. Fill out label and laboratory requisition

   C. Identify patient and explain procedure

   D. Provide privacy

   E. Give bedpan or urinal

   F. Take bedpan or urinal to utility room after voiding

   G. Pour urine into a graduate

   H. Pour at least 120 cc (four ounces) into the specimen container

   I. Cover specimen container, attach label, and set in safe place

   J. Clean bedpan and return to designated area

   K. Provide for patient's comfort

   L. Wash hands

   M. Take or send specimen to laboratory

   N. Chart procedure and observations

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #51-OBTAIN A CLEAN CATCH OR MIDSTREAM URINE SPECIMEN

(NOTE: Urine usually collected to examine for microorganisms and other abnormal substances may be done as routine.)

I. Equipment needed

   A. Sterile urine specimen bottle with cover

   B. Label

   C. Requisition Slip from Laboratory

   D. Cleaning agent

   E. Water

   F. Cotton balls

   G. Sterile gloves (for health assistant)

II. Procedure for female ambulatory patient

   A. Fill out label and laboratory requisition

   B. Wash hands

   C. Assemble equipment and take to bedside

   D. Instruct patient

      1. Cleanse area from front to back while holding labia open with thumb and index finger. Use one cotton ball for each stroke

      2. Repeat cleansing three more times, once on each side of labia and once down center over urinary meatus

      3. Begin voiding, allowing first stream to flow into toilet while still spreading labia

      4. Catch only the midstream urine in a sterile specimen bottle

         (NOTE: If clean catch kit is used, follow manufacturer's instructions.)

      5. Complete voiding in toilet

      6. Cover specimen bottle

E. Rinse and dry outside of bottle after specimen is obtained

F. Wash hands

G. Label and take or send the specimen to the laboratory

H. Care for equipment

I. Report and record the procedure

(NOTE: For bed patient, procedure is similar except patient is placed on bedpan and assisted as needed by health assistant.)

III. Procedure for male ambulatory patient

A. Fill out label and laboratory requisition

B. Wash hands

C. Assemble equipment and take to bedside

D. Identify patient and explain procedure

E. Instruct patient

1. Cleanse the glans penis with a circular motion, beginning at the meatus and working away from it
2. Repeat cleansing with three or four cotton balls and the cleansing solution
3. Rinse with water
4. Void a small amount into the toilet
5. Catch only the midstream urine in a sterile specimen bottle
6. Complete voiding in toilet
7. Cover specimen bottle

F. Rinse and dry the outside of the bottle

G. Wash hands

H. Label and take or send the specimen to the laboratory

I. Care for equipment

J. Report and record the procedure

(NOTE: For bed patient, procedure is similar except patient is placed on the bedpan and assisted as needed by the health assistant.)

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET#52 -COLLECT A TWENTY-FOUR HOUR SPECIMEN

I. Equipment needed

- A. Receptacle for storing urine
- B. Bedpan or urinal
- C. Graduate
- D. Labels
- E. Requisition Slip from Laboratory

II. Procedure

- A. Wash hands as needed throughout this procedure
- B. Obtain storage receptacles from laboratory and label them

  (NOTE: Many tests require a preservative; laboratory will add it to receptacle if notified.)
- C. Place receptacles in designated area
- D. Give a detailed explanation of the procedure to the patient; stress the importance of collecting all the urine passed during the required time
- E. Place signs at the patient's bedside and in the bathroom utility room stating that a twenty-four hour urine specimen is being kept

  (NOTE: Information should include type of specimen needed, hour and day started, hour and day when test will be finished, and also such information as ice needed to pack specimen.)
- F. Inform patient if he/she is on a specific liquid intake
- G. Have patient void at the beginning of the time period and DISCARD this specimen; all other urine for the specified time period will be saved, measured, and poured into the storage receptacle
- H. Have patient void at the end of the time period and add this last specimen to the collection
- I. Inform the patient when the collection is completed, and remove the signs
- J. Label and take or send the specimens to the laboratory

K. Report and record the procedure

(NOTE: These directions can be used for a cumulative or fractional twenty-four hour specimen. If the urine is to be collected for three or four time periods during the twenty-four hour period, the initial specimen is discarded; all other specimens, including the one at the end of the time period, are saved. At the end of each period, the collected urine is labeled and sent to the laboratory with the proper requisition.)

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET#53 -COLLECT A FECES OR STOOL SPECIMEN

I. Equipment needed

- A. Bedpan or commode
- B. Two tongue depressors
- C. Plastic or cardboard container with cover
- D. Paper towel
- E. Label
- F. Laboratory requisition

II. Procedure

- A. Check the physician's orders for specific instructions and reason for collecting specimen
- B. Fill out the label for the container and the laboratory requisition
- C. Wash hands
- D. Inform the patient of the procedure and ask him/her to use the bedpan or commode so the specimen may be obtained

  (NOTE: If the patient is ambulatory, she/he may be allowed to use the bedpan on a nearby chair; in some instances, the bedpan or disposable container may be placed in the toilet just under the toilet seat.)

- E. Take the bedpan to the utility room after obtaining the specimen
- F. Use tongue depressors to place about two tablespoons of the fecal material in the container; cover container
- G. Wrap the soiled tongue depressors in a paper towel and discard
- H. Care for the bedpan in the usual manner
- I. Wash hands
- J. Label and take the specimen to the laboratory promptly

  (NOTE: Specimens are examined for pus, blood, tissue, parasites, and helminths or to determine digestive function; it is best to get the specimen to the laboratory as soon as possible while still warm.)

- K. Report and record the procedure and observations

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #54 -COLLECT A SPUTUM SPECIMEN

I. Equipment

   A. Sputum container with cover

   B. Label

   C. Laboratory requisition

II. Procedure

   A. Check physician's orders

   B. Fill out label on container and requisition

   C. Wash hands

   D. Identify patient and explain procedure

   (NOTE: Explain that sputum is mucus coughed up from the lungs, and not saliva in the mouth. Also, explain the importance of keeping the mouth clean after eating to avoid contamination of the specimen with particles of food.)

   E. Place sputum container with cover at bedside

   F. Leave container at bedside until sufficient sputum is collected, or for a twenty-four hour period, whichever is specified in physician's orders

   G. Seal container with cover at specified time

   H. Wash and dry outside of container

   I. Wash hands

   J. Take or send specimen to laboratory

   K. Report and record the procedure

   (NOTE: Follow manufacturer's instructions for use of containers.)

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #55- ADMIT A PATIENT

I. Equipment

Pen
Admission forms
Envelope for valuables
Gown
Thermometer
Blood pressure apparatus
Stethoscope
Urine specimen container

II. Procedure

Procedure	Key Points
A. Greet the patient by name, introduce yourself and give a warm welcome.	
B. Take the patient to his room using stretcher, wheelchair, or offering assistance with walking as condition indicates.	Be courteous to patient and relatives.
C. Introduce to roommates, bathroom, nurses station, personal storage facilities to acquaint him with surroundings.	Do not put to bed unless condition indicates.
D. Take temperatue, pulse, respiration, blood pressure and weight.	
E. Observe the general appearance; noting unusual conditions as edema, bruises, eruptions, abrasions, discharges, paralysis, cyanosis or dyspnea. Also note facial expressions and position of patient in bed (if the patient has been put to bed).	

F. Ask well-chosen questions that will convey to you the nature of the illness, and the attitude taken toward entering the health care facility. Observe mental alertness.	Do not appear to pry or to be merely curious. Let him know that you are interested in helping him and can be trusted. Listen to all the patient tells you.
G. Demonstrate the use of the signal bell and assure him it will be answered promptly.	
H. Instruct patient to keep dentures in the cup provided when removed from the mouth.	
	Give an admission bath only if the patient is very dirty.
I. Make a record of valuables and clothing and store properly.	
J. Obtain urine specimen if patient is able to void.	

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #56- DISCHARGE A PATIENT

I. Procedure	Key Points
A. Assist the patient to dress.	
B. Gather together all articles belonging to patient, including medications. Be sure no article is left in drawers or in closet.	Check with the doctor so patient and/or relatives may be given instructions regarding medications.
C. Check clothing and all belongings with patient and obtain his or a responsible person's signature on a possessions' list.	Don't forget dentures, glasses, hearing aid or other prosthetic devices.
D. When the patient is ready to leave, accompany him to the appropriate exit. See that he is comfortably placed in the car, reassure him, and bid him goodbye.	
E. Note all pertinent facts including time of departure, condition, and to whom discharged.	Keep in mind that all charts on dismissed or deceased patients are to be kept for five years. It is wise to have a systematic means of filing these charts in case they are needed again as a legal document.

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #57- TRANSFER A PATIENT

I. Procedure	Key Points
A. Check all clothes and personal belongings of patient against original checklist.	Make new checklist or add to original, if items have changed.
B. Obtain treatment and medicine cards, addressograph plate, patient's kardex and chart.	
C. Transport patient to new unit by method ordered with personal belongings, medical records, addressograph plate, medicine and personal equipment.	Use method (wheelchair or stretcher) as indicated by physician or patient's condition.
D. Introduce patient to head nurse on new unit.	
E. Check with person receiving patient that all items listed on check sheet are accounted for.	

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #58-- TRANSPORTING PATIENTS (Transfer a Patient in and out of Bed)

I. Tools and equipment required:

   A. Bathrobe

   B. Slippers

   C. Chair

II. Procedure:

   A. Explain to the patient what is going to be done.

   B. Provide privacy.

   C. Assist the patient in putting on a bathrobe.

   D. Ask the patient to move near the edge of the bed.

   E. Elevate the head of the bed.

   F. Place straight chair beside bed, near the middle.

   G. Take patient's pulse.

   H. Dangle the patient

      1. Place one arm around the patient's shoulder.

      2. Place the other arm under the patient's knees. Gently pivot the patient until the feet hang over the side of the bed.

      3. Put on the patient's slippers.

   I. Ensure patient's safety and comfort while out of bed.

   J. Check the patient's pulse rate, respiration, color, and general tolerance of the procedure periodically.

   K. At the end of the prescribed time for patient to be out of bed, place the pillow at the head of the bed.

   L. Remove the patient's bathrobe and slippers.

M. Assist the patient into bed.

N. Lower the head of the bed as desired.

O. Rearrange bed cover, and leave patient comfortable.

P. Check the patient's pulse before leaving and report it.

Q. Record the time and duration the patient was out of bed. Pulse, respiration, and patient's general tolerance of the procedure should be recorded.

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #59 - TRANSPORTING PATIENTS (Assist Patient to Walk)

I. Tools and equipment required

   A. Bathrobe

   B. Slippers

   C. Chair

   D. Pillow

II. Procedures

   A. Greet patient and explain procedure.

   B. Provide privacy.

   C. Assist patient in putting on a bathrobe.

   D. Instruct patient to move to edge of bed.

   E. Elevate the head of the bed.

   F. Place straight chair at side of bed near middle.

   G. Take patient's pulse.

   H. Dangle the patient's feet by:

      1. Placing one arm around the patient's shoulders

      2. Placing the other arm under the patient's hips. Gently pivot the patient until the patient's feet hang over the side of the bed.

      3. Put on patient's slippers.

   I. Tell the patient to rest both feet on the floor.

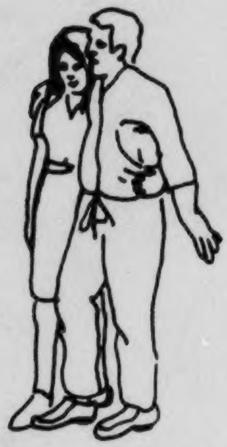
   J. Slide your arm under the patient's arm and put your hands around the patient's back.

   K. Ask the patient to place hands on your shoulders.

L. Once the patient is standing, let patient try out this position for a minute or two to get used to it and to keep balance.

M. If the patient is walking, ask to place the patient's arm around your shoulders, and place your nearest arm along side the patient's waist.

N. Walk with patient slowly and in step.



O. Let the patient sit down if tired.

P. Take pulse and respiration, and report findings if abnormal.

Q. If patient can walk unsupported but feels unsure, then attendant should walk just slightly behind patient and keep hands on patient's robe belt for support.

R. Make sure there are no other patient's pieces of furniture or other equipment in walking path.

S. Assist patient back into bed.

T. Take and record vital signs in patient's chart.

U. Report any unusual findings to the nurse in charge.

JOB SHEET #60 - TRANSPORTING PATIENTS
(Assist Patient to Stand)

I. Tools and equipment required

A. Bathrobe

B. Slippers (non-skid)

C. Chair

D. Blanket

II. Procedures

A. Greet patient and explain procedure.

B. Provide privacy.

C. Assist patient in putting on bathrobe.

D. Instruct patient to move to the edge of the bed.

E. Elevate the head of bed.

F. Place straight chair beside bed near middle.

G. Take patient's pulse.

H. Dangle the patient's feet by:

1. Placing one arm around the patient's shoulders.

2. Placing the other arm under the patient's hips. Gently pivot the patient until the feet hang over the side of the bed.

3. Put on slippers (non-skid) on patient's feet.

I. Tell the patient to rest feet on the floor.

(NOTE: If patient is already sitting in a chair, have patient slide to the edge of chair and proceed with procedure I.)

J. If assistance is needed, you may assist by sliding your arm under the patient's, and putting your hands around the patient's back.

K. Ask patient to place hands on your shoulders.

L. Once the patient is standing, allow patient to stand according to orders given in chart.

M. Repeat activity as instructed.

N. Take, record, and report the patient's pulse and respiration.

HEALTH CARE PROCEDURES

UNIT XVI

JOB SHEET #61 - TRANSPORTING PATIENTS (Put Patient on a Stretcher)

I. Tools and equipment required:

A. Stretcher

B. Blanket

II. Procedures:

A. Prepare stretcher according to institutional policy and take it to the unit.

B. Greet patient and explain procedure.

C. Screen the unit.

D. Fanfold top bedclothes to foot of bed.

E. Place stretcher at right angles to foot of bed. Lock the stretcher.

F. Three attendants stand on the side of the bed by which the stretcher has been placed.

G. First attendant cradles patient's head and shoulders with arms closest to head of bed and supports back with other arm.

H. The second attendant supports buttocks with arm closest to head of bed. The attendant then supports thighs with the other arm.

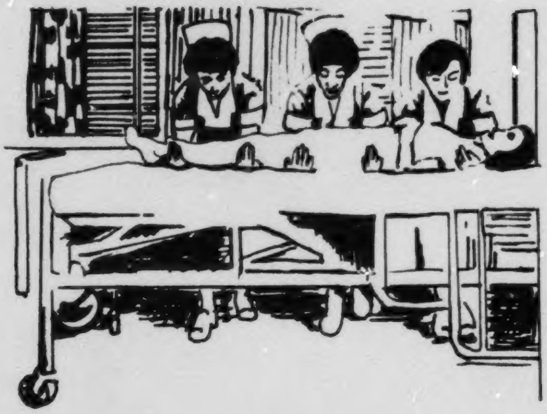
I. The third attendant supports legs and feet.

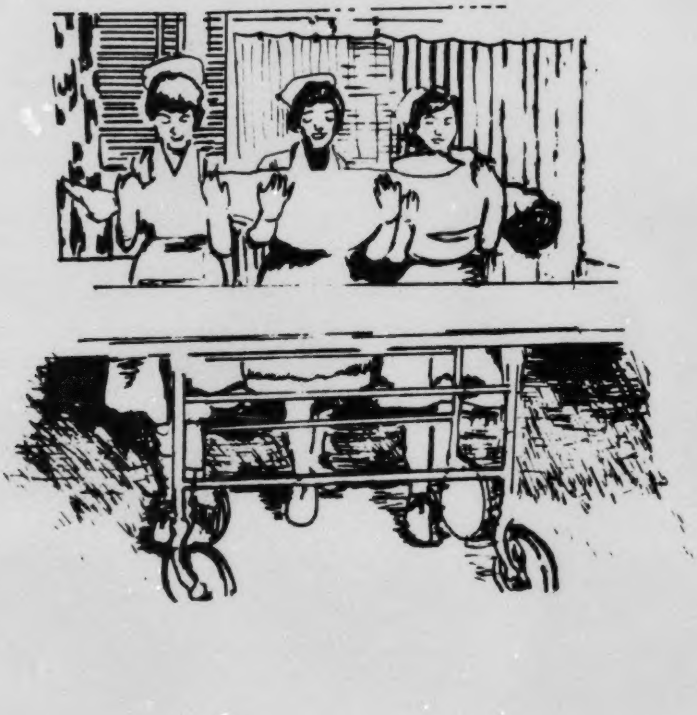
J. Move patient to side of bed.

K. Lift patient, holding close to chest. Step backward together and turn slowly. Pivot on attendant who is supporting patient's head and shoulders. Step forward and place patient on the stretcher.

L. All attendants must have a good grip on the patient, and move together. Place patient on stretcher slowly to avoid discomfort.

M. Cover patient with blanket. Elevate head with one pillow.





HEALTH CARE PROCEDURES

UNIT XVI

JOB SHEET #62 - TRANSPORTING PATIENTS (Accompany Patient to other Departments)

I. Tools and equipment required

  A. Vehicle

  B. Cover for patient

  C. Patient's chart

II. Procedures

  A. Greet patient and explain procedure.

  B. Assist patient into robe and slippers, or cover.

  C. Assist patient in/onto vehicle if needed.

  D. Push patient feet first or assist patient in walking.

  E. Notify personnel at destination.

  F. Report completion of transfer and return chart and vehicle.

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #63- INCIDENT REPORTS

Incident Reports are made out if there is an error in treatment or a patient accident occurs. They are not part of the patient's chart as are consents and releases but are intended for the hospital administration and attorneys. They alert the hospital administration to the possibility of litigation (law suits).

What Constitutes an "Incident"?

The following generally constitute incidents that are reportable:

1. Patient falls.
2. Patient is burned.
3. Articles are lost inside patient, e.g., following a surgical operation.
4. Personal articles are lost or damaged.
5. Medication errors.
6. Errors in patient identification, e.g., giving the treatment to the wrong patient.
7. Injection injuries, e.g., needle injury to a nerve during medication injection.
8. Treatment injuries.
9. Thermometers broken in patient's mouth, rectum, bed, etc.

Who Completes Incident Reports?

The nursing personnel most familiar with the incident, or who observed its happening, should complete the account of the incident according to the agency policy.

If an incident occurs, provide emergency and safety measures for the patient; call for help, either verbally or by patient call bell. Your team leader will notify a house physician or the patient's own physician.

After patient comfort and safety are provided, try to obtain the patient's account of the incident. You will need this to complete the report. Carry out doctor's order for care if incident necessitates follow-through, e.g., patient falls and breaks an arm - doctor orders and X-ray.

Incidents: Immediate Procedure

Important Steps	Key Points
1. Provide for patient's safety and comfort.	Call for help verbally or by signaling with the patient's call bell. Do not try to move patient by yourself because you may hurt the patient and yourself. Remove any safety hazards such as broken glass. Provide for his warmth.
2. Return patient to bed.	Do this as soon as possible. Get assistance as needed. Make patient comfortable. Follow doctor's orders if given, e.g., call for an X-ray or discontinue a blood transfusion.
3. Complete Incident form.	Ask team leader for assistance in completing your history of the incident and other patient information. Charting should be clear, concise, and accurate.
4. Secure patient's report of incident.	After patient is calmed or has been seen by a physician, you may ask him to relate what happened to cause the incident, if he is aware there was an incident. Verify the patient's understanding of the form. Write this information in the space provided in the report. It is desirable (when appropriate) to quote patient's own words. You will start the comment on the form: "The patient states that ....." Document report if possible, i.e., list all individuals familiar with incident.
5. Place completed form on patient's chart.	Physician will sign in the appropriate place; one section is forwarded to the nursing office, one to the administration, and one remains on patient's chart.

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #64-APPLY RESTRAINTS

(NOTE: Hopefully restraints are used as a last resort in confining patient in bed or in chair. Restraints are applied when patients need extra security or support to keep from falling or moving from bed or chair when incapable of moving on their own. Some patients are confused and will pull at tubes and dressings. Restraints will keep them from injurying themselves.)

I. Equipment

   A. Belts

   B. Wrist restraints

   C. Mittens

   D. Vest restraints

II. Procedure

   A. Belts (Figure 1)

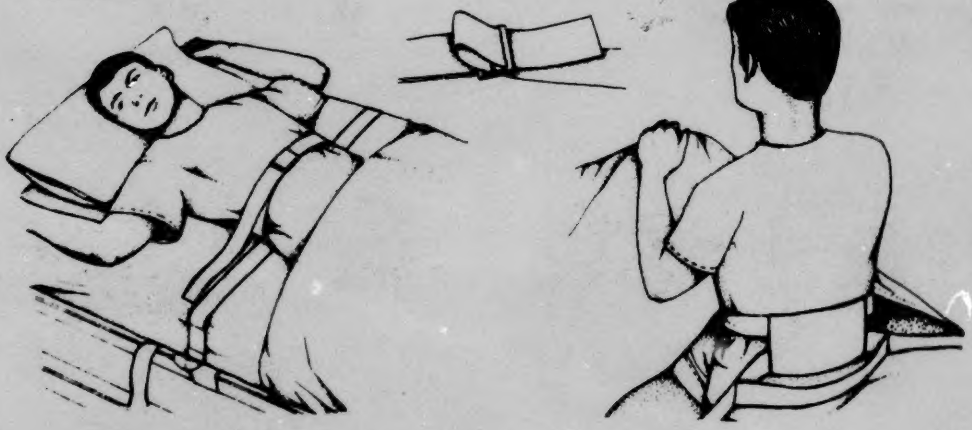
      1. Place flannel back pad in center of bed approximately where patient's waist will be

      2. Anchor long bed straps to bed spring frame on both sides by encircling bed spring frame and passing through buckle

      3. Check to see that pad is in center of bed and that belts are secured with buckles up and waist belt toward head of bed

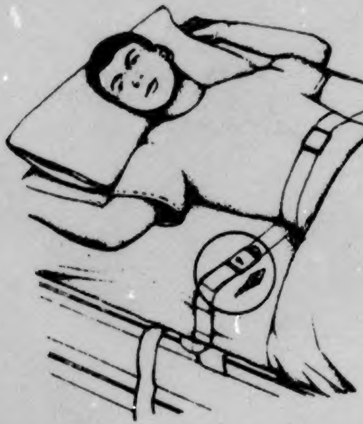
      4. Place patient on belt and secure waist belt

FIGURE 1



5. Use belt with lock if more security is needed (Figure 2)

FIGURE 2

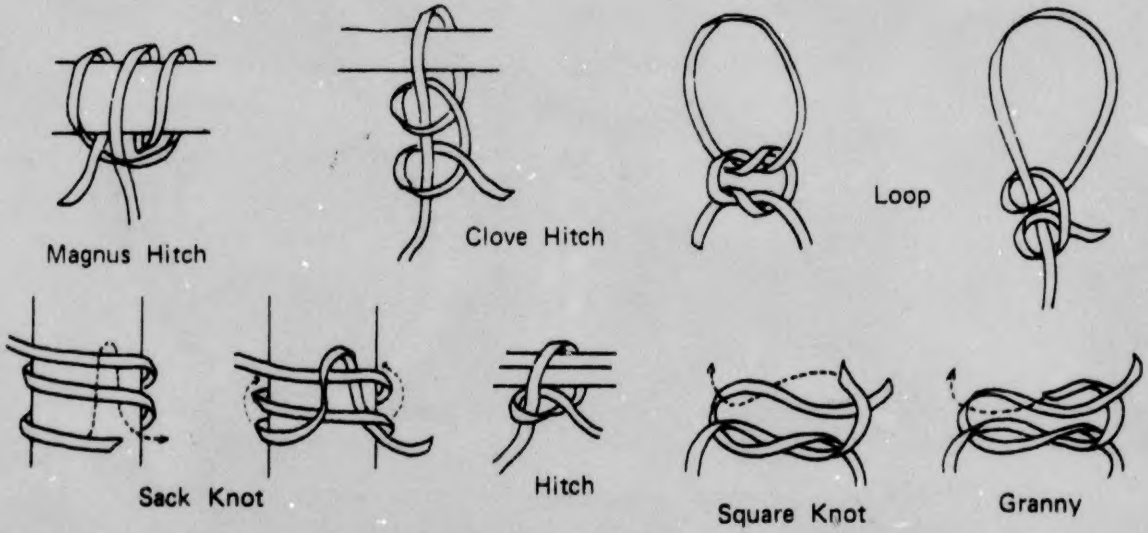


(NOTE: Always know where key to restraint is kept, or keep it with you at all times.)

6. Test for proper fit by placing flat of hand between belt and waist

(NOTE: A variety of knots can be used to secure straps. Practice different knots that are secure but can be easily untied by health worker. Figure 3.)

FIGURE 3


Magnus Hitch
Clove Hitch
Loop
Sack Knot
Hitch
Square Knot
Granny

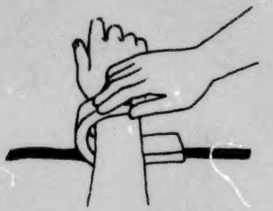
B. Wrist restraints

(NOTE: Restraints can be made by using gauze and a clove hitch knot.)

1. Place pad under limb with strap side of pad down

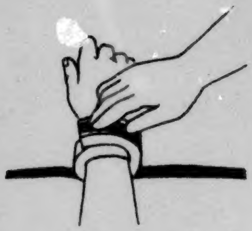
2. Wrap cushion of pad around limb, allowing retainer to remain loose (Figure 4)

FIGURE 4



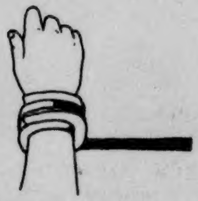
3. Wrap other end of pad around limb making it secure but not too tight (Figure 5)

FIGURE 5



4. Place retainer over pad connector and press to attach; secure strap to spring frame (Figure 6)

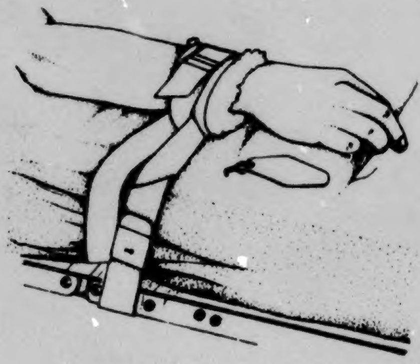
FIGURE 6



(NOTE: This restraint uses velcro to adhere the pad together.)

5. Use an extra security fleece padded restraint if extra security is needed (Figure 7)

FIGURE 7



(NOTE: Ankle restraints are also available.)

C. Mitts

(NOTE: Mitt also can be made from stockinette and tape. These restraints are used to protect patients who may possibly injure themselves if hands and fingers were loose by preventing patients from removing catheters, IV's and dressings.)

1. Place hand in mitten and secure at wrist (Figure 8)
2. Secure to bed with straps around bed spring frame (Figure 9)

(NOTE: Mitts can be made from loosely woven net or cotton material and may have a rigid layer on the palm side.)

FIGURE 8

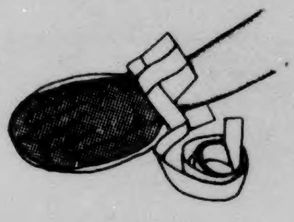
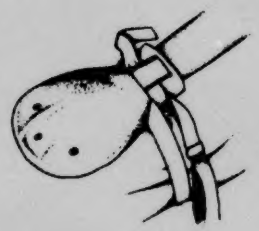


FIGURE 9



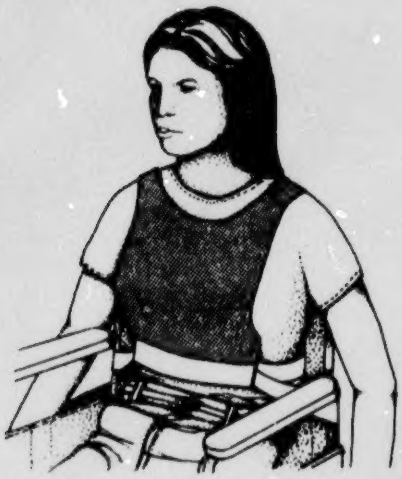
D. Vest restraints

(NOTE: Vest restraints can be used in bed or in chair to give support and to secure safety.)

1. Secure patient in wheelchair by loosening waist strap and slip vest over the head

2. Draw waist belt to comfort and secure behind chair; slip loops over push handles (Figure 10)

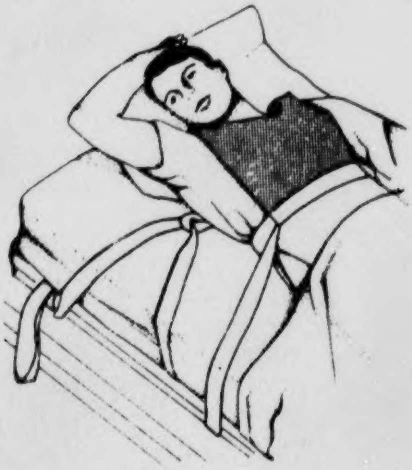
FIGURE 10



3. Secure patient in bed by fastening ties at bed spring frame or under bed

4. Prevent patient from rolling or sitting up by wrapping waist belt around frame then back through shoulder loop and secure under bed (Figure 11)

FIGURE 11



All illustrations used in Job Sheet 1 are used with permission from the J.T. Posey Co., from the Posey Guide, copyright 1978, pp. 1, 2, 3, 4, and 12.

JOB SHEET #65--TEST REFLEXES OF OTHER STUDENTS

I. Equipment needed--Percussion hammer

II. Procedure

A. Plantar reflex--Stroke the outer side of the sole of the foot with a blunt instrument from heel to toe

(NOTE: The normal reaction should be flexion of the great toe. The abnormal reaction would be extension of the great toe with a fanning spread of other toes. This extensor reflex is called the Babinski reflex.)

B. Ankle jerk--Tap the Achilles tendon with the flat side of the percussion hammer

(NOTE: The normal reaction should be extension followed by flexion of the ankle. The abnormal reaction would be absent or exaggerated action.)

C. Knee jerk or patellar reflex--Tap knee just above or below patella

(NOTE: The normal reaction should be extension of the lower leg. The abnormal reaction would be absent or exaggerated action.)

HEALTH CARE PROCEDURES

UNIT XVI

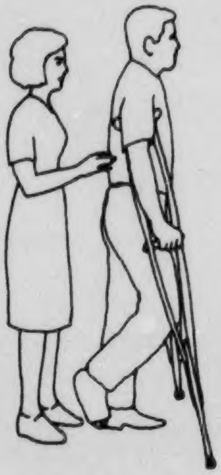
JOB SHEET #66--ASSIST A PATIENT TO USE CRUTCHES

I. Tools and equipment required

- A. Crutches
- B. Robe
- C. Slippers

II. Procedures

- A. Greet patient and explain procedure.
- B. Identify patient's disability.
  - 1. Check chart.
  - 2. Check with head nurse.
- C. Assist patient to place crutches under arms.
- D. Have patient position crutches by placing weight on palms.
- E. Support patient in carrying out specific walking gait.



F. Stress equal timing without a pause between steps.

G. Watch gait and correct mistakes.

H. Assist patient in carrying out designated goal for each day.

I. Check patient's pulse at the end of the activity.

J. Record the time and duration of patient activity, as well as the patient's general tolerance of the procedure.

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #67–GIVE ACTIVE RANGE-OF-MOTION EXERCISES

(NOTE: In order to perform range-of-motion exercises for the patient, it is important for the student to practice them. By doing them, one will be better able to move patient in a normal manner without causing pain or injury.)

I. Exercising upper extremities

A. Neck

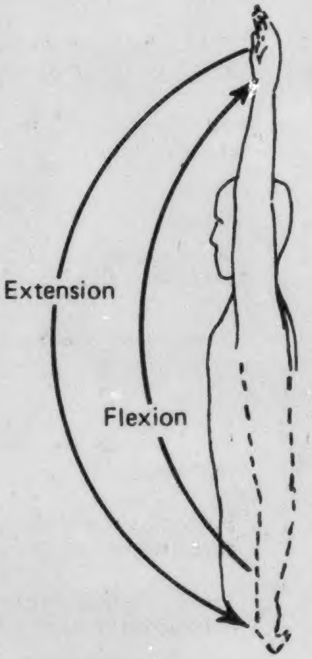
1. Bend head and neck forward until chin touches chest, lift head up and bend back, and return to starting position (flexion and extension)

2. Turn head to left and then to right (rotation)

B. Shoulders

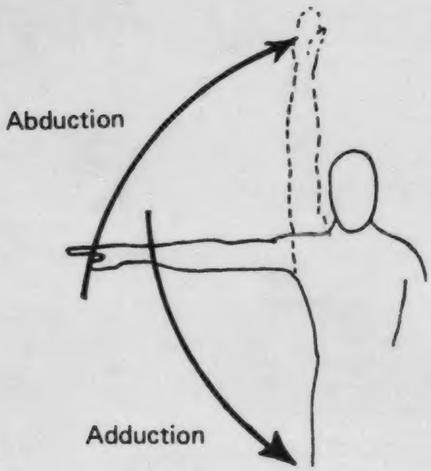
1. Lift arm foward, up over head, and return to side (flexion and extension) (Figure 1)

FIGURE 1



2. Lift arm up and out to side until it is over head; return to the side (abduction and adduction) (Figure 2)

FIGURE 2



3. Flex elbow, bring elbow up to level of the shoulder, and reach the back of your neck with your fingers (external or outward rotation)

4. Flex elbow, draw your arm across your chest, and touch the other shoulder (internal or inward rotation)

C. Elbow--Bend elbow to touch shoulder with your fingertips; straighten elbow (flexion and extension)

D. Wrist

   1. Bend palm side of hand down toward arm; then back (flexion and extension)

   2. Bend wrist from side to side

E. Fingers

   1. Bend fingers to make a fist; then straighten fingers (flexion and extension)

   2. Spread fingers fanwise; then bring together (abduction and adduction)

   3. Touch thumb into palm; then extend out straight (flexion and extension)

   4. Touch tips of each finger with thumb (opposition)

II. Exercising the trunk

A. In dorsal recumbent position, slowly raise trunk to sitting position and return (flexion and extension)

B. In sitting position with hands behind head, bend to the left and then to the right (lateral flexion)

C. In same position, rotate upper body to the left and to the right (rotation)

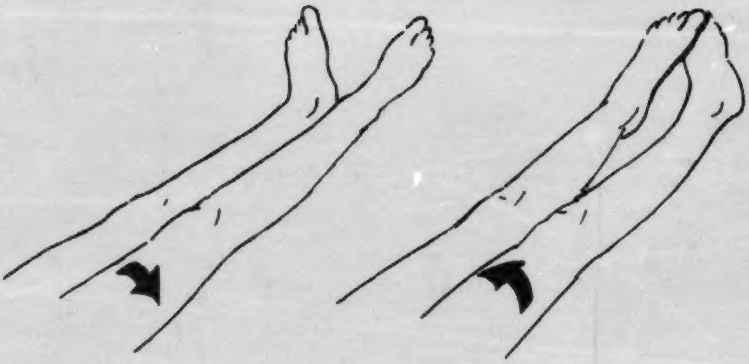
III. Exercising lower extremities

(NOTE: These exercises should be done in supine or recumbent position.)

A. Hip

1. With legs straight and toes pointing up, move leg out to side and return (abduction and adduction)
2. Keeping knees straight, turn legs so toes point inward then outward (internal and external rotation) (Figure 3)

FIGURE 3



External Rotation

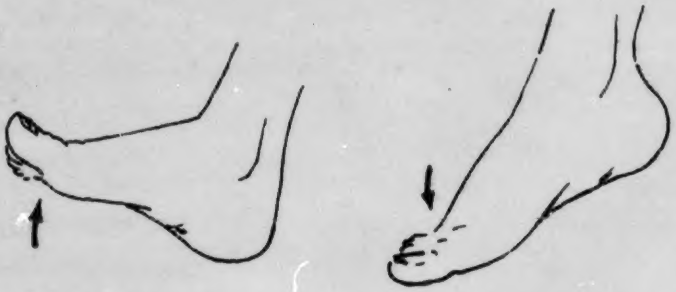
Internal Rotation

B. Knee and hip--Bend knee bringing it as close to chest as possible; return to starting position (flexion and extension)

C. Ankle

1. Bend foot up toward leg and down away from leg (dorsal flexion and plantar flexion) (Figure 4)

FIGURE 4



Dorsal Flexion

Plantar Flexion

2. Move ankle in circle (rotation)

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #68GIVE PASSIVE RANGE-OF-MOTION EXERCISES

(NOTE: Stage in the classroom with another student playing the part of a patient who is unable to move the right side of the body due to paralysis. Provide range-of-motion exercises for all joints on affected side. Support dependent part of extremity being exercised and avoid range-of-motion beyond point of pain.)

I. Preparation

   A. Adjust bed to a comfortable working height with patient in supine position· move patient close to edge of bed nearest affected side

   B. Replace top bedding with bath blanket or cover to avoid exposure of part of the body not being exercised

   C. Use principles of proper alignment and body mechanics to avoid excessive fatigue for patient and health assistant

II. Exercising

   A. Neck

      1. Supporting patient's head with your hands, flex patient's neck by bringing head forward until chin touches chest; return head to the pillow

      2. Rotate the head by gently turning to one side and then the other

   B. Shoulder

      1. Cup patient's elbow in right hand; grasp wrist with the left hand

      2. Move patient's arm straight up over head, keeping arm toward midline (flexion)

      3. Flex elbow over patient's head if space does not permit keeping elbow straight

      4. Reverse procedure, returning arm to starting position (extension)

      5. Cup patient's elbow with right hand, cradling lower arm with patient's arm close to side; use left hand to hold shoulder from elevating

6. Keep patient's arm at bed level and move it out to side to a ninety-degree angle (abduction)

7. Return arm to starting position (adduction)

8. Abduct patient's arm at shoulder to ninety degrees, bend elbow to ninety degrees; support patient's wrist with your right hand and patient's elbow with your left hand; bring forearm toward the bed, palm down (internal rotation)

9. Bring forearm toward bed palm up keeping shoulder and elbow at ninety-degree angle throughout (external rotation)

C. Elbow

1. Bend elbow, with patient's arm at patient's side, palm up, moving patient's hand toward patient's shoulder (flexion)

2. Straighten arm (extension)

3. Grasp patient's hand as if to shake hands; stabilize wrist; turn patient's palm up (supination)

4. Turn patient's palm down (pronation)

D. Wrist

1. Flex patient's elbow, supporting patient's forearm with your left hand and patient's hand with your right hand

2. Bend the wrist forward (flexion)

3. Bend wrist backward (extension)

4. Bend patient's wrist toward little finger (abduction)

5. Bend patient's wrist toward patient's thumb (adduction)

E. Fingers

1. Support patient's wrist with left hand

2. Cup right hand over the back of the patient's hand

3. Beginning with fingertips, bend patient's hand down to form a fist (flexion)

4. Straighten fingers (extension)

5. Place patient's hand in prone position on bed

6. Move each finger away from middle finger and return (abduction and adduction)

7. Place hand in supine position, flex thumb into palm; then extend it (flexion and extension)

8. Move patient's thumb to touch tips of each finger, supporting fingers as needed; return to normal (opposition)

F. Hip and knee

1. Place left hand under patient's knee and cup heel with right hand, stabilizing ankle

2. Lift patient's leg and bend knee moving patient's leg toward chest as far as possible without causing pain (flexion)

3. Lower leg to bed (extension)

4. Supporting knee and ankle and holding leg straight, move patient's leg out to side and back (abduction and adduction)

5. Place one hand on patient's knee and one on patient's ankle with patient's leg resting on bed; roll entire leg inward, then outward (rotation)

G. Ankle and foot

1. Holding ankle with one hand and foot with the other, pull toes up toward knee; then push them down (dorsal flexion and plantar flexion)

2. Rotate ankle by holding ankle with one hand and turning foot in, then out (rotation)

III. Adjust patient's bed for comfort; replace top covers

IV. Report and record procedure and observations

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #69--MEASURE VISION

I. Equipment needed--Snellen test chart

II. Procedure

(NOTE: The power of vision is usually measured by having the individual read the Snellen test chart. Lines of letters of varying size are printed on the chart and beside each line is given the distance at which it can be read by persons having normal vision.)

A. Have subject being tested sit 6 m (20 ft) from the Snellen chart with eyes at level of 6 m (20 ft) line on chart

B. Cover one eye with disposable card or cup

C. Have subject read the letters as far as possible with the uncovered eye beginning with an upper line and reading down

(NOTE: If the person can read the line marked for vision at twenty feet, he/she has 20/20 vision. If she/he is only able to read the line that can be read by the normal eye at one hundred feet, vision for that eye is 20/100. If he/she can read the line that the normal eye can read at fifteen feet, vision is better than normal, 20/15.)

D. Determine the subject's vision for each eye separately

E. Check for the following possible conditions

1. Emmetropia--Normal vision; objects beyond twenty feet form sharp images on the retina
2. Myopia--Near-sightedness; objects at or beyond twenty feet form sharp images in front of the retina
3. Hyperopia--Far-sightedness; objects at twenty feet form sharp images behind the retina
4. Astigmatism--Visual defect in the shape of the eyeball or lens so that light rays are focused unequally in the two eyes
5. Strabismus--Cross-eye; occurs when the muscles of the eyes do not coordinate so that the eyes do not work together

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #70 TEST HEARING

I. Equipment needed--Pocket watch or stop watch

II. Procedure

   A. Have subject close eyes and cover one ear with hand

   B. Hold the watch close to the uncovered ear

   C. Move away gradually

   D. Note the distance at which the watch is no longer heard

   E. Wait a few seconds

   F. Hold watch at a point farther from subject

   G. Move toward the uncovered ear gradually

   H. Note the distance at which the watch is heard

   I. Record your findings

   J. Give a possible explanation for differences noted

   K. Repeat for other ear

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #71 - ASSIST WITH MOUTH CARE

I. Equipment needed
  A. Toothbrush
  B. Dentrifice or toothpaste
  C. Mouthwash solution
  D. Emesis basin
  E. Mouthwash cup
  F. Drinking tube
  G. Face towel
  H. Tissues
  I. Washcloth
  J. Denture cup, if needed

II. Procedure
  A. Identify patient and explain procedure
  B. Provide privacy
  C. Wash hands
  D. Assemble equipment
  E. Prepare patient
    1. Raise head of bed, as permitted
    2. Place towel over chest to protect gown and bed covers
    3. Place needed equipment on overbed table
  F. Proceed with oral care
    1. Pour water over toothbrush, add dentrifice or toothpaste, and give toothbrush to patient for brushing
    2. Hold emesis basin under chin
    3. Have patient rinse mouth with mouthwash solution and fresh water

G. Dry patient's face; remove towel

III. Procedure for helpless or unconscious patient

A. Identify patient and explain procedure

B. Provide privacy

C. Wash hands

D. Prepare patient

1. Turn patient's head to one side
2. Place towel under chain and to side of face
3. Place emesis basin under mouth
4. If necessary, use padded tongue depressor to hold patient's mouth open; DO NOT USE YOUR FINGERS

E. Moisten applicators with solution

(CAUTION: Squeeze excess moisture againt side of mouth cup to prevent patient from gagging and/or aspirating fluid.)

F. Cleanse upper and lower gums, teeth, and tongue

1. Hold cheek open with tongue depressor
2. Use proper stroke from gum line to apex of mouth
3. Using applicators, clean systematically from left side of mouth to front
4. Discard applicators and tongue depressor
5. Repeat from right side to front of mouth using fresh applicators and tongue depressor
6. Discard applicators and tongue depressor
7. Swab tongue from base to tip gently to prevent gagging

G. Apply lubricant on applicator to lips and outer areas of mouth

1. Lubricant prevents chapping and promotes healing
2. Vaseline, or glycerine and lemon mixture may be used

H. Care for equipment

  1. Rinse toothbrush thoroughly and return to bedside stand

  2. Empty emesis basin, wash, rinse, dry, and return to designated area

I. Make patient comfortable

J. Wash hands

K. Report and record care and observations

IV. Procedure for cleansing dentures

A. Identify patient and explain procedure

B. Provide privacy

C. Wash hands

D. Assist patient in removing dentures; place dentures in denture cup

(NOTE: Use 4 x 4's to hold dentures while removing them.)

E. Have patient rinse mouth with water or mouthwash solution

F. Clean dentures thoroughly with brush and dentrifice, holding dentures over basin of water

(CAUTION: Use cool or slightly warm water. Hot water may cause dentures to crack or break. If dentures accidently slip from your hands, the fall would be cushioned by water in the basin so they would not break.)

G. Place dentures in a denture cup containing fresh mouthwash solution or water

H. Wash hands

I. Return dentures to patient; assist in replacing them

J. Leave dentures in solution in a denture cup marked with patient's name, if not returned to patient's mouth

K. Wash hands

L. Report and record procedure

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #72-COMB HAIR

I. Equipment needed

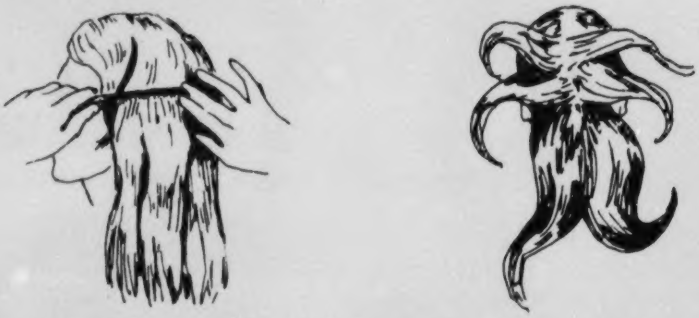
- A. Towel
- B. Comb
- C. Brush

II. Procedure

- A. Wash hands
- B. Identify patient and explain procedure
- C. Provide privacy
  1. Assist patient into comfortable position
  2. Place towel under head, if in bed, or around shoulders, if in chair
- D. Part hair in sections (Figure 1)

  (NOTE: If hair is long, begin at botton and work towards crown.)

FIGURE 1



  1. Comb or brush each section, holding hair with one hand near head using slow, even strokes to avoid pulling
  2. Wet matted hair with alcohol to aid in combing
  3. Part and arrange hair according to wishes of patient
- E. Observe condition of scalp and hair; report any unusual finding to supervisor
- F. Wash hands
- G. Record and report procedure and observations

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #73-SHAMPOO HAIR

I. Equipment needed

- A. Shampoo board or waterproof sheet
- B. Large pitcher
- C. Small pitcher
- D. Large basin
- E. Waterproof protection for pillow
- F. Soap solution or shampoo
- G. Newspaper
- H. Bath towels
- I. Hair dryer, if available

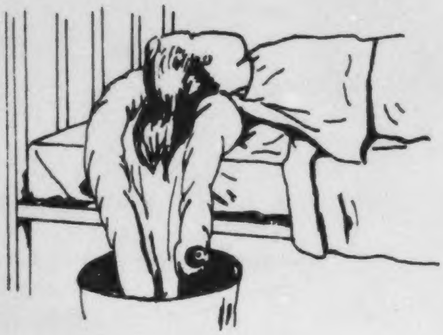
II. Procedure

- A. Wash hands
- B. Identify patient and explain procedure
- C. Provide privacy
- D. Prepare patient and unit
    1. Place bucket on newspaper covered chair at head of bed
    2. Lower backrest of bed and place protective pillow covered with bath towel under patient's head and shoulders

3. Place shampoo board under head of patient directing board's end into bucket on chair

   (NOTE: If shampoo board is not available, place waterproof sheet over pillow; roll side edges of sheet to form a trough. See Figure 1.)

FIGURE 1



4. Cover patient with bath blanket
5. Fanfold top bedding to foot of bed

E. Give shampoo
   1. Hold pitcher at side of head so that solution is not spilled in face
   2. Wet hair by pouring small amount of soap solution or shampoo over head
   3. Lather and massage scalp well, using fingers
   4. Rinse by pouring water from pitcher over hair
   5. Repeat lathering and massaging until hair is clean
   6. Rinse and repeat until clear of soap

F. Dry hair
   1. Dry forehead and ears with towel
   2. Wrap head in towel
   3. Remove shampoo board or waterproof sheet and towel from under head
   4. Make patient comfortable

  5. Brush and comb hair
  6. Complete drying with dryer or towel

G. Make patient comfortable

  1. Replace gown, if wet
  2. Replace bath blanket with top bedding
  3. Change pillowcase
  4. Straighten unit; place communication device within reach of the patient

H. Remove equipment

  1. Wash, rinse, and dry shampoo board and pitchers
  2. Return to proper place

I. Wash hands

J. Report and record care and observations

III. Procedure using dry shampoo--Follow manufacturer's instructions

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #74-SHAVE A PATIENT

I. Equipment needed

- A. Basin of hot water
- B. Shaving cream or soap
- C. Safety razor
- D. Aftershave lotion or body lotion
- E. Tissues
- F. Mirror
- G. Face powder
- H. Face towel

II. Procedure

- A. Wash hands
- B. Prepare patient
    1. Explain procedure to patient
    2. Spread towel under area to be shaved
- C. Prepare equipment
    1. Adjust light so that it shines on area to be shaved
    2. Assemble and place equipment on bedside table
- D. Shave patient
    1. Pat some warm water on area to soften
    2. Apply shaving soap or lather generously
    3. Hold skin taut with fingers of one hand as you shave in the direction that hair grows
    4. Use short strokes and observe for any growths, such as moles or warts

E. Complete aftershave care

   1. Wash shaved area to remove remaining soap or later

   2. Apply antiseptic, if skin has been nicked

   3. Apply aftershave, body lotion, or powder if patient desires

F. Care for equipment

   1. Wash, rinse, and dry razor and other equipment

   2. Replace equipment in proper place

G. Wash hands

H. Report and record procedure

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #75-CLEAN THERMOMETERS

I. Equipment needed

   A. Two small basins

   B. Soap

   C. Cotton balls

   D. Disinfectant

   E. Thermometers

II. Safety factors

   A. Always use cool tap water

   B. Handle with care to avoid breakage

   C. Clean rectal thermometers separately from oral thermometers

III. Procedure

   A. Assemble equipment

      1. Use cool water and soap to till one basin

      2. Fill other basin with disinfectant

   B. Wash thermometers in soapy water using cotton balls; rinse with cool water

   C. Place thermometers in disinfectant so all are covered

   (NOTE: Check for cleansing procedure in each institution.)

   D. Remove thermometers from disinfectant, rinse with cold water, and dry

   E. Store thermometer in designated place

   F. Replace equipment

   G. Wash hands

   (CAUTION: When thermometers are kept in patient's room, they should be washed after each use before storing.)

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #76- CLEANING MEDICAL INSTRUMENTS

I. Methods of Sterilization

   A. Moist heat (autoclave). Steam under pressure; usually 15 minutes at 15# pressure p.s.i., temperatue 121^{o}C for 15 minutes. Used for:

      1. Glassware
      2. Sharp edged or hinged instruments
      3. Syringes and needles
      4. Rubber catheters and drain tubes
      5. Linens
      6. Sponges

   B. Dry heat (Oven) - 160^{o}C for two hours. Used for:

      1. Glassware, as test tubes plugged with cotton, Petri dishes, and plugged flasks
      2. Metal instruments

   C. Chemicals - Sterilization by action of ethylene oxide gas

      1. Used for polyethylene items as those used in anesthesia or for respiratory therapy, lenses and electrical equipment
      2. Requires 3-5 hours exposure to chemical
      3. Articles must be aerated after sterilization to avoid hazard of toxic residue
      4. Plastic materials must be aerated for 48 hours, rubber articles for 72 hours

   D. Disinfection

      1. Boiling water for 10 minutes (100^{o}C at sea level)
      2. 70% ethyl or isopropyl alcohol

3. Quarternary ammonium compounds as Zephiran, Cetylcide or Radiol.* (Exact time and dilution recommended by manufacturer should be used.)

E. Tests for efficacy of sterilization procedures

1. Mechanical controls, as the graphic chart of an autoclave which records temperature, time and date of operation.

2. Chemical controls

   a. Sealed glass tubes containing pellets which melt when the temperature has reached a certain degree, e.g. "Diack" controls.

   b. Color-change cards and strips impregnated with dye that changes color when exposed to moist heat in controlled amounts and time. (e.g. "Steam-clox").

   c. Sterilization-indicating tapes, which have markings that change color when exposed to adequate time and temperature, as "3M" tape.

3. Biological controls

   a. Most effective method of confirming sterility

   b. Method

      1. Spores of non-pathogenic bacteria are placed on paper strips or in sealed ampules.

      2. Paper strips or ampules are placed in sterilizer along with regular load and subjected to sterilization process.

      3. After completion of sterilization, paper or ampules are sent to bacteriology laboratory for incubation under optimum conditions for bacterial growth.

      4. If no growth occurs, the spores have been destroyed which indicates that sterilization is complete. Growth of bacteria indicates that sterilization procedure did not destroy all bacteria.

II. Procedure

A. Immediately after use, open instruments and rinse under running water to remove gross soil.

B. Separate routine instruments from sharp instruments.

C. Remove knife blades and discard using institution's recommended safety precautions.

D. Disassemble all instruments consisting of two or more parts to allow cleaning medium and steam to reach all surfaces.

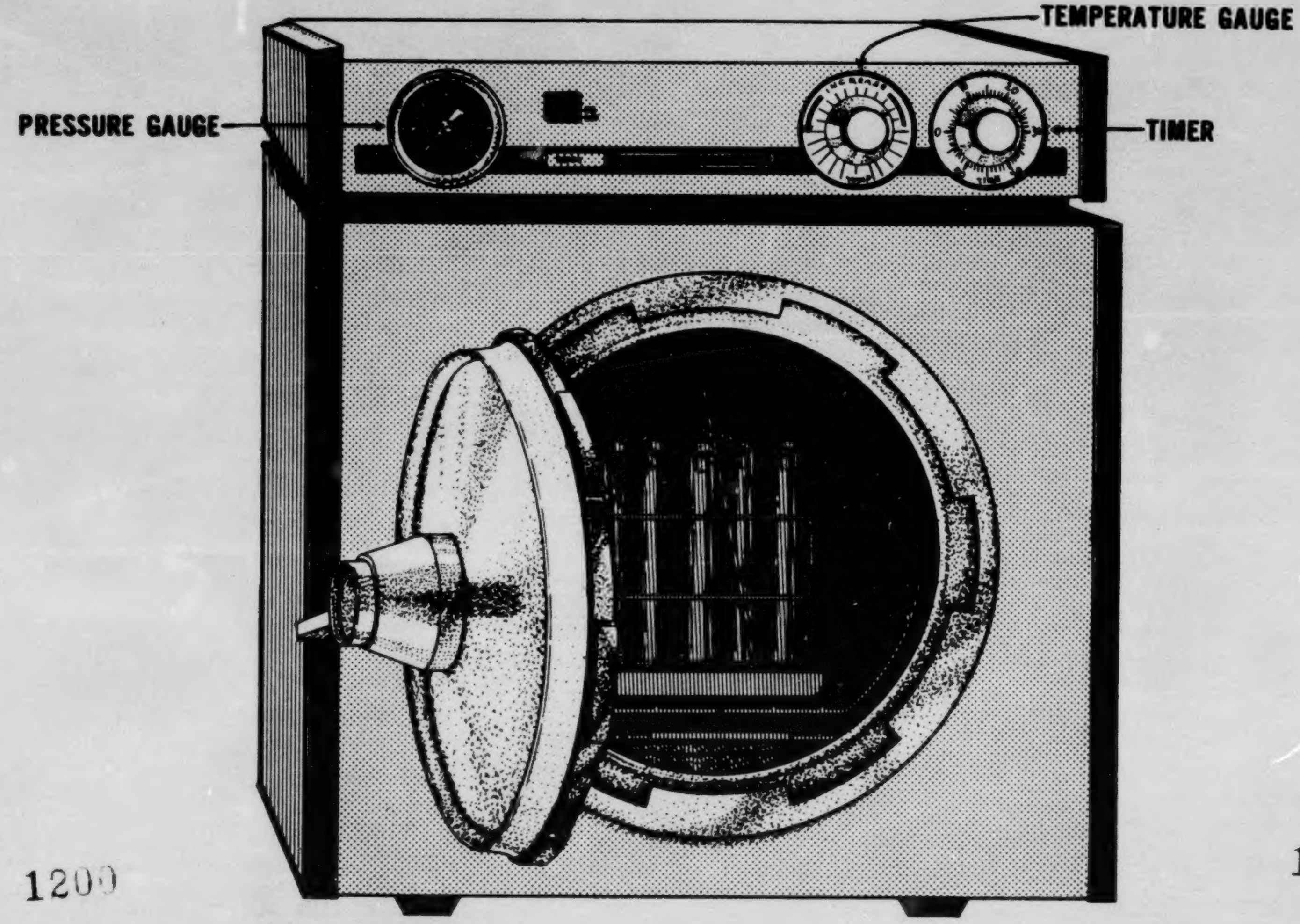
E. Place instruments in wire tray or wire basket and terminally sterilize in washer-sterilizer. This decontamination will prevent cross contamination, and protect personnel from infection.

F. Process instruments through ultrasonic cycle, or thoroughly wash by hand using stiff brush and detergent.

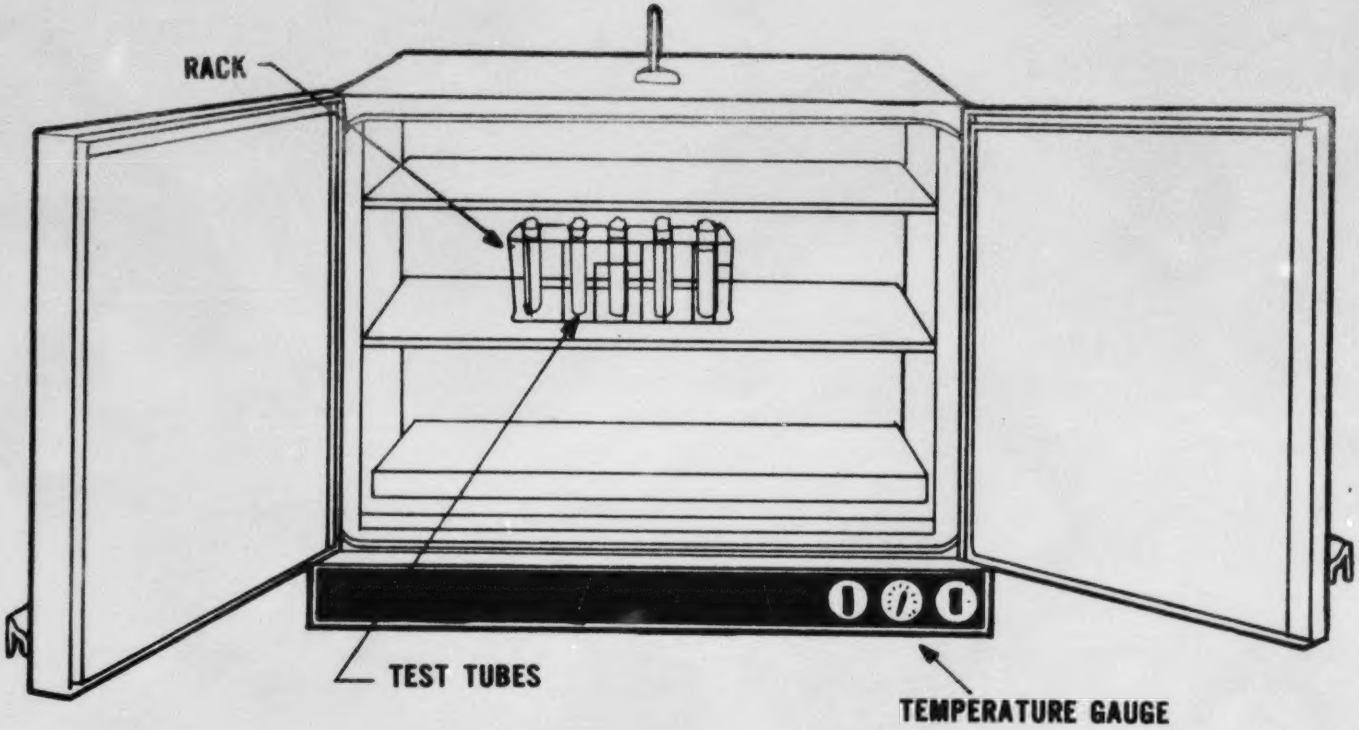
G. Sort instruments, inspect for cleanliness, wrap small groups or single instruments in muslin wrappers, or paper.

H. Secure with pressure-sensitive tape and label.

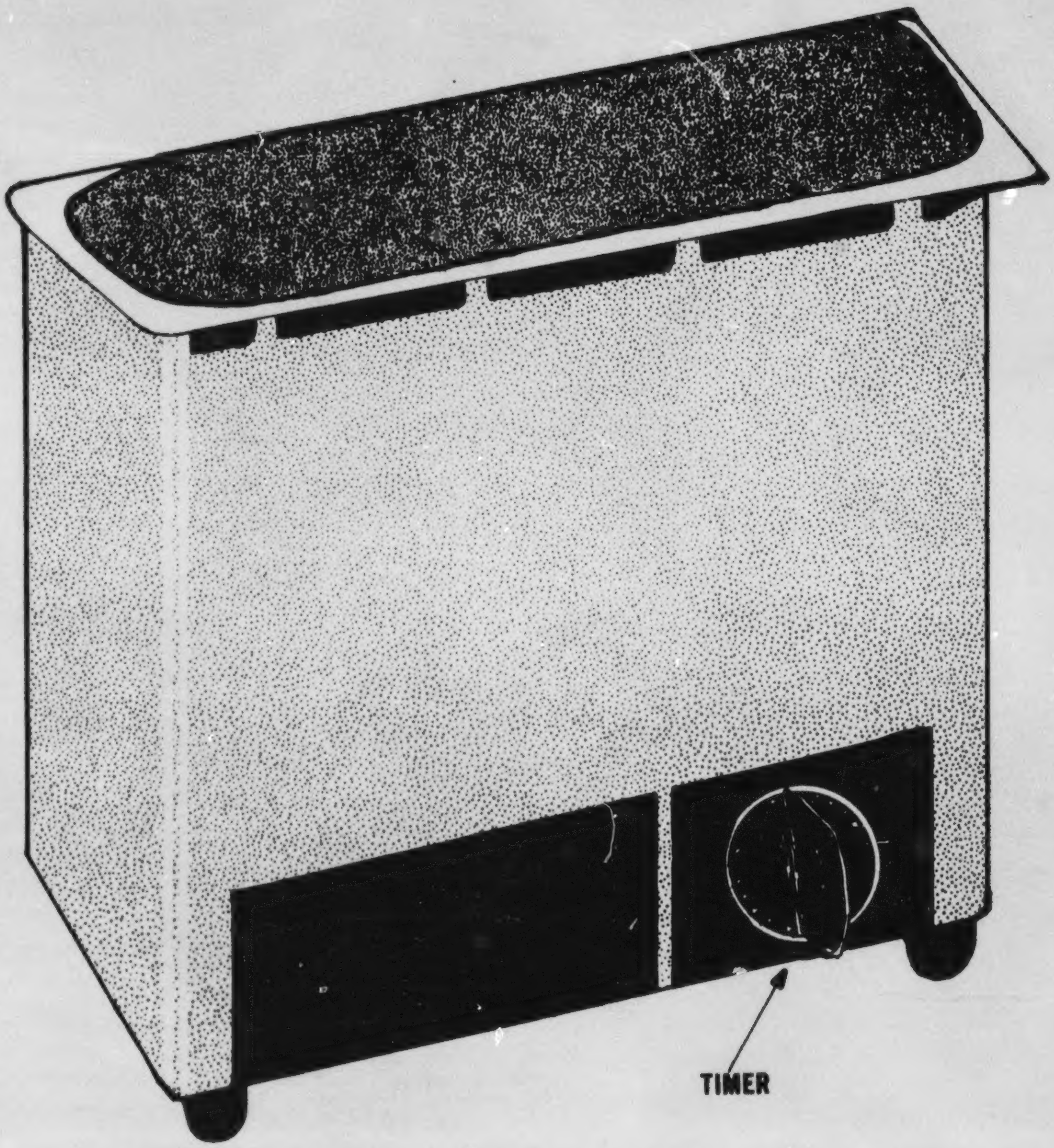
AUTOCLAVE


TEMPERATURE GAUGE
PRESSURE GAUGE
TIMER

STERILIZING OVEN


RACK
TEST TUBES
TEMPERATURE GAUGE

ULTRASONIC CLEANER



TM-4

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #77--PERFORM CPR (CARDIOPULMONARY RESUSCITATION)

(NOTE: CPR should be done by a qualified person who has been effectively trained. Many lives could be saved if everyone knew how to perform cardio-pulmonary resuscitation.)

I. Equipment--To practice CPR, it is advisable to use the training mannequins that are actually equipped with "breathing" and "heartbeat" devices

(NOTE: These can be obtained from the Red Cross units or hospital inservice training programs.)

II. Procedure

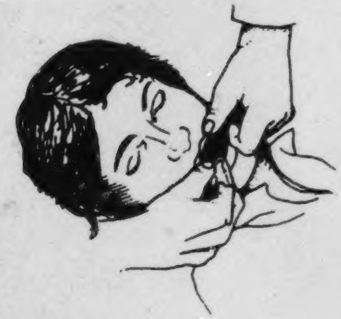
A. Establish open airway

(NOTE: The best accepted way to do this is mouth-to-mouth or mouth-to-nose method.)

1. Remove any foreign substance from the mouth (Figure 1)

(NOTE: If possible, use cloth to cover fingers.)

FIGURE 1

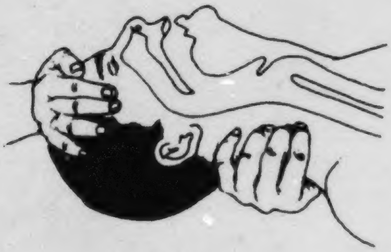


2. Position victim's head backward so that chin is pointing upward

3. Place one hand under victim's neck and lift; place heel of other hand on victim's forehead and move head backward (Figure 2)

(NOTE: In many cases this may open the airway and no other action would be needed.)

FIGURE 2



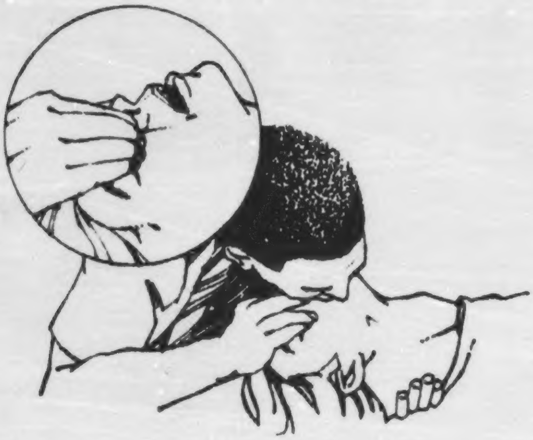
4. Hold victim's nostrils shut with the thumb and index finger of your hand that is on victim's forehead

   (NOTE: This will prevent leakage of air.)

5. Open your mouth widely, take a deep breath, and blow air into victim's mouth, making sure that there is a tight seal over victim's mouth (Figure 3)

   (NOTE: Provide at least one breath every five seconds for adults, or twelve per minute.)

FIGURE 3

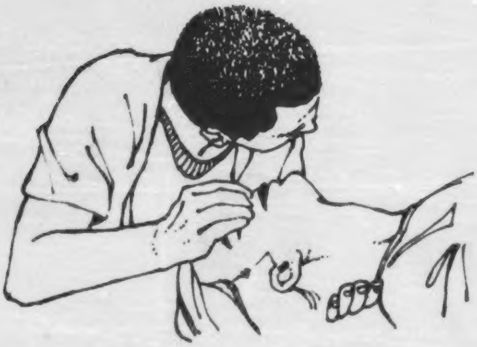


6. Check results by watching victim's chest to see if it rises and falls after breath

7. Stop blowing when victim's chest expands; turn your head to side and listen for exhaled air (Figure 4)

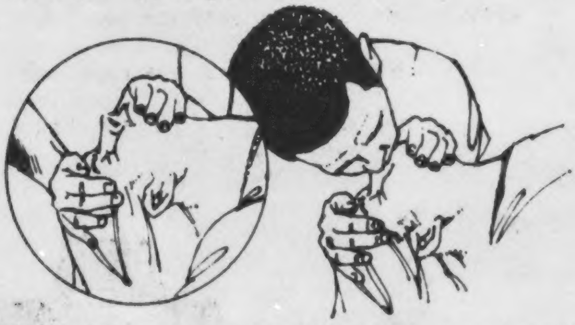
   (NOTE: Make sure exhalation takes place.)

FIGURE 4



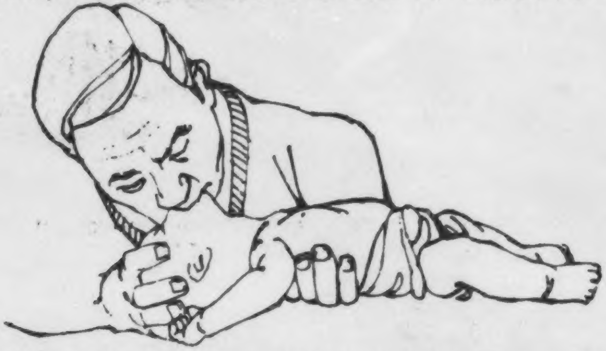
(NOTE: In some cases, it is necessary to use mouth-to-nose breathing. The backward tilt of head is used, but victim's mouth is closed. A tight seal is made by the mouth over victim's nose and air is blown in. For exhalation, the mouth is opened to allow air to escape. See Figure 5.)

FIGURE 5



(NOTE: In infants or young children, the mouth and nose should be sealed by the mouth and a breath should be blown in every three seconds with less pressure and volume than used for the adult. Only small puffs need to be used for infants. See Figure 6.)

FIGURE 6



(CAUTION: If exchange is not being made, be sure to check for airway obstruction. If necessary, turn the adult to side and administer sharp blows between the shoulder blades to shake the material free. A child may be suspended for a moment by the ankles or turned upside down over one arm and given two or three sharp blows between the shoulder blades. See Figures 7 and 8.)

FIGURE 7

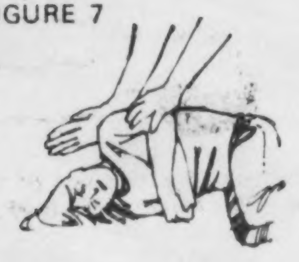
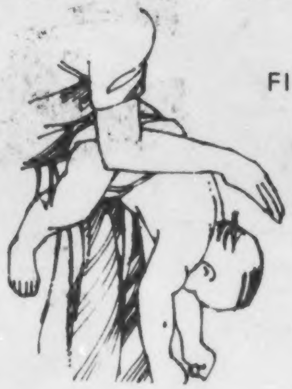


FIGURE 8



B. Begin external cardiac massage

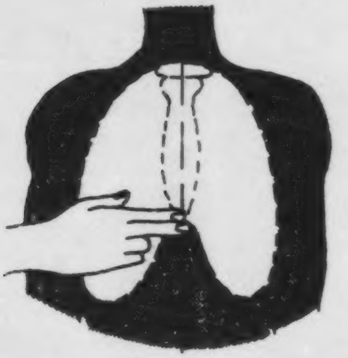
(CAUTION: This procedure should also be practiced on one of the mannequins designed for CPR training.)

(NOTE: Artificial circulation can be provided by giving external cardiac compression that can force the heart to pump blood.)

1. Kneel at victim's side near chest

2. Locate the lowest part of the sternum (breast bone) called the xiphoid (Figure 9)

FIGURE 9



3. Place heel of one hand about 1"-1 1/2" away from that tip (Figures 10 and 11)

FIGURE 10

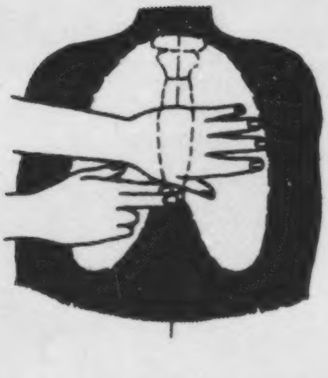
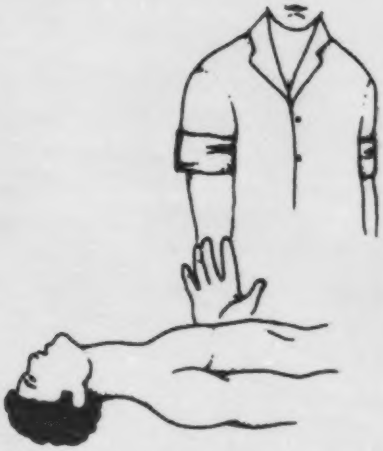


FIGURE 11



(NOTE: Make sure you use only the heel of the hand because to use all of the hand might exert more pressure than needed, resulting in injury to ribs.)

4. **Place your other hand on top of the one that is in position; be sure to keep fingers off the chest wall (Figures 12 and 13)**

   (NOTE: Interlacing of fingers will keep this from happening.)

FIGURE 12

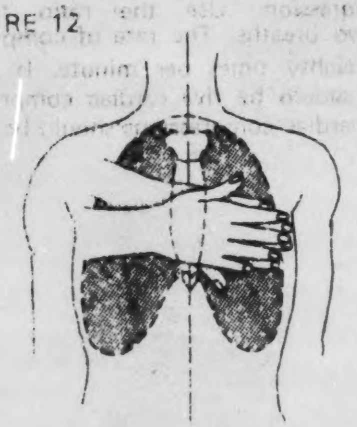
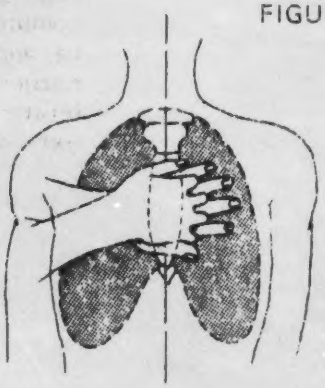
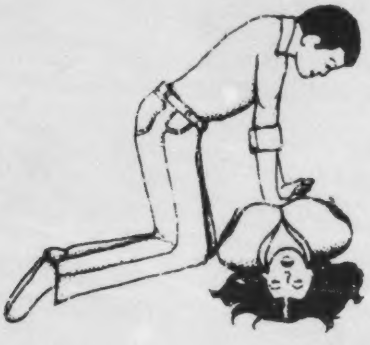


FIGURE 13



5. Bring shoulders directly over victim's sternum, keeping your arms straight and compress downward (Figure 14)

FIGURE 14



6. Depress sternum about 1 1/2"-2" for an adult victim

   (NOTE: Cardiac compression is different for small children and infants. Only one hand is needed for compression with the other hand slipped under the child's back for support. Use only tips of index and middle fingers for infants and depress mid-sternum 1/2"-3/4" at a rate of eighty to one hundred times a minute. For small children, use the heel of one hand and depress 3/4"-1 1/2" at a rate of eighty to one hundred times per minute. Breaths should be given after every fifth compression.)

7. Without removing your hands from the victim's body, relax after each compression using a rhythmical, rocking motion, allowing chest to return to normal position after compression

   (NOTE: If you are the only rescuer, you have to provide breathing and cardiac compression. Use the ratio fifteen cardiac compressions to two breaths. The rate of compressions should be approximately eighty times per minute. If there are two rescuers, the ratio should be five cardiac compressions to one breath and rate of cardiac compressions should be approximately sixty per minute.)

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #78-USE CORRECT POSTURE

I. Check standing posture

- A. Feet parallel, slightly apart with weight balanced evenly on heels, outside borders, and balls of feet
- B. Knees straight and relaxed, neither flexed nor hyperextended
- C. Hips tucked in
- D. Abdomen flat
- E. Chest up
- F. Shoulders free and easy, neither forward nor backward
- G. Head centered over body with chin level
- H. Arms hanging relaxed at sides
- I. Back straight, neither too curved nor too flat

(NOTE: If student is unable to achieve good body alignment, exercises may be needed to strengthen certain muscle groups.)

II. Check walking gait

- A. Feet parallel, slightly apart with toes pointing straight ahead
- B. Roll foot from heel to toe along outer border
- C. As one leg advances, weight is gradually shifted forward
- D. Relaxed, but erect, posture is maintained with arms swinging easily in rhythm with step

(NOTE: Maintaining good alignment of ankle and foot strengthens muscles that support the foot and ankle, thus making walking less tiring.)

III. Check sitting posture

- A. Stand close to chair and when possible place one foot slightly under chair
- B. Flex hips and knees, thus trunk is inclined forward to easily distribute weight
- C. Lower body weight easily and smoothly by using leg muscles

D. While sitting

1. Back is held erect
2. Weight falls on tuberosities of ischia with segments of spine directly above ischia
3. Chair seat should be high enough to permit feet to rest flat on floor but not high enough to cause pressure on the nerves and blood vessels on the under surface of thighs

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #79-SERVE AND ASSIST AT MEALTIMES

I. Equipment

- A. Bedpan or urinal
- B. Mouthwash cup and kidney basin
- C. Washcloth and soap
- D. Diet tray with all necessary utensils

II. Procedure

- A. Before meal care
    1. Offer bedpan or urinal or assist to bathroom before mealtime
    2. Give mouth and hand care
        - a. Assist patient in rinsing mouth with mouthwash or clear water, if desired
        - b. Give patient warm washcloth with soap to cleanse hands before eating
    3. Position patient
        - a. Assist patient to sit up in chair, if possible
        - b. Elevate head of bed if patient must remain in bed, so patient can assume a sitting position of possible
        - c. Position overbed table for convenience of patient
    4. Prepare environment
        - a. Create attractive environment by putting away all other utensils
        - b. Place a fresh glass of water within patient's reach
- B. Preparation and serving of trays
    1. Check name and room number so each patient receives correct tray
    2. Serve only one tray at a time

3. Serve trays promptly so that foods are desirable temperature

4. Check each tray to see that it is complete

5. See that patient who should have a tray receives one

6. Serve patients who need to be fed after other patients so full attention can be given to feeding them

C. Assisting patient at mealtime

1. Place tray on table with main dish closest to patient

2. Remove food covers and set aside

   (NOTE: Lift the cover of the food away from patient.)

3. Help patient with cutting food, buttering bread, and pouring beverage as necessary; place food and communication device so they are within reach

4. Allow patient ample time to eat; stress importance of therapeutic diet, if necessary; if patient does not eat, try to determine reason

5. Avoid unnecessary interruptions during mealtime, such as giving medications or treatments

6. Ask dietician to talk with patient if there is a problem about diet

D. After meal care

1. Assist with mouth care

2. Straighten bed and remove crumbs

3. Place patient in a comfortable position; adjust communication device

4. Put food covers back on tray and return tray to proper place

5. Note and record amounts and kinds of food eaten

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #80-FEED ANOTHER PERSON

I. Equipment--Food tray, including all utensils needed for mealtime

II. Procedure

   A. Place patient in a comfortable position

   B. Place tray where patient can see the food, if possible

   C. Sit down while feeding patient, if possible

   (NOTE: Person will be more relaxed if assistant is sitting.)

   D. Describe each food to the visually handicapped patient

   E. Place napkin under patient's chin

   F. Fill fork or spoon only half full; avoid spilling

   G. Feed slowly; alternate foods

   H. Allow enough time between bites

   I. Give liquids through drinking tube if possible; warn patient to take small sips if liquid is hot

   J. Encourage patient to hold bread or drinking straw if able

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #81- UTILIZE ASEPTIC TECHNIQUE

I. Procedure for Surgical Scrub

   A. Select and put on scrub suit.

   B. Remove jewelry.

   C. Test conductivity of shoes.

   D. Put on mask and cover nose and mouth.

   E. Prepare for scrub; roll up sleeves, adjust water temperature and flow.

   F. Wet hands and apply detergent.

   G. Wash hand and arms to three inches above elbows.

   H. Rinse arms (fingertips to elbows with hands held upward away from uniform).

   I. Clean fingernails.

   J. Obtain sterile brush (pad) and apply detergent.

   K. Scrub hands and arms two to five minutes.

   L. Rinse arms and hands; hold upward away from uniform.

   M. Discuss modification for OB or short scrub.

II. Procedure for Self Gloving (Open Technique)

   A. Pick up right glove with cuff edge.

   B. Pull on glove.

   C. Pick up left glove, insert right gloved fingers under cuff of sterile glove.

   D. Pull left glove up over hand and gown cuff.

   E. Pull right glove up over cuff of gown.

   F. Adjust fingers of gloves.

III. Procedure for Self Gloving (Closed Technique)

A. Pick up right glove.

B. Place palm of right glove against palm of right hand, glove fingers pointing toward elbow.

C. Draw reverse side of glove back over end of sleeve, over gown cuff.

D. Pull on right glove and gown cuff simultaneously.

E. Adjust fingers in right glove with gowned left hand.

F. Pick up left glove with right hand.

G. Place left glove directly over left gown cuff, glove fingers pointing to elbow.

H. Draw glove back over end of sleeve and up over gown cuff.

I. Pull glove and ribbed gown cuff on hand simultaneously

J. Hold hands upward away from face.

IV. Procedure for Gowning and Gloving Someone Else

A. Select sterile towel and hand to gownee. Towel is unfolded and laid in gownee's right palm.

B. Select and unfold gown.

C. Hold gown by shoulder seams, outside of gown toward self, armholes facing gownee.

D. Gownee puts arms in armholes with forceful downward motion.

E. Settle gown on gownee's shoulders without contaminating gloves.

F. Gownee's gown secured by unsterile person.

G. Pick up gownee's right glove, hold glove by cuff, with thumb of glove facing gownee. Hold your fingers away from gownee's unsterile hand.

H. Hold glove cuff firmly, waist high.

I. Gownee inserts right hand into glove.

J. Pull glove over cuff of gownee's gown.

K. Pick up left glove, thumb facing toward gownee.

L. Hold glove firmly, waist high, and spread cuff open laterally.

M. Gownee inserts left hand into glove.

N. Pull left glove onto hand and up over gown cuff.

O. Adjust fingers of gownee.

P. Hand sterile towel to gownee to cover gloves until procedure starts.

V. Procedure for Sterile Handling with Pickup Forceps

A. Grasp forceps by handles, lift vertically, tip downward (do not touch sides of container), open ratchets.

B. Pick up sterile items and place on sterile wrapper or surface.

C. Replace forceps in container, avoiding contamination.

VI. Procedure for Pouring Sterile Solutions

A. Remove cap and cover from container and place cap upside down on table.

B. Unwrap sterile basin.

C. Pour solution into basin, label up, from six inch height. Do not splash.

D. Replace cover without contamination, and return container to storage.

VII. Procedure for Holding Vial to Withdraw Sterile Solution

A. Obtain vial and check labels with doctor's order.

B. Clean vial stopper with alcohol pledget.

C. Hold vial firmly, label up.

D. Sterile person inserts sterile needle into vial stopper, inserts air and withdraws solution into syringe.

E. Sterile person withdraws vial.

F. Vial is replaced in storage, or discarded, as indicated.

VIII. Procedure for Changing Sterile Dressing

A. Collect supplies and prepare patient and environment.

B. Loosen binder or tape.

C. Remove soiled dressing and discard.

D. Inspect wound.

E. Put on sterile gloves, if appropriate, or use sterile forceps.

F. Drape wound.

G. Cleanse around wound with antiseptic. Cleanse with circular motion.

H. Apply ointment or powder, if indicated.

I. Apply dressing.

J. Discard gloves or forceps.

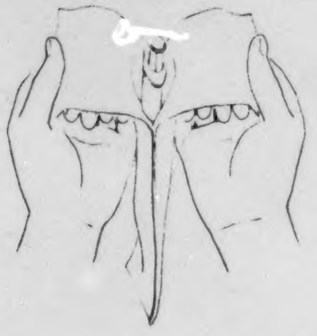
K. Apply dressing retainer.

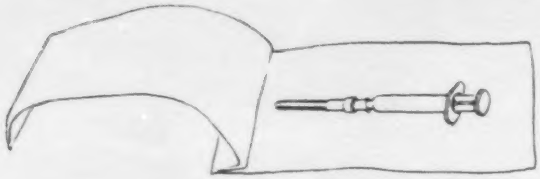
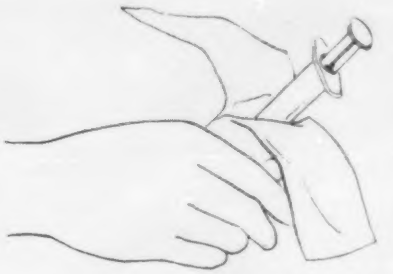
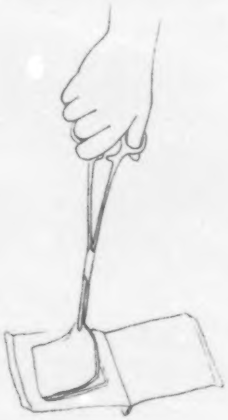
L. Leave patient comfortable and return items to storage.

M. Record procedure.

VX. Procedure for Opening a Commercially Prepared Sterile Package

Important Steps	Key Points
1. Grasp the package by the slightly extended edges provided.	Bring both your hands together and grasp the edges of the package.
2. Peel along the sealed edge.	Turn your hands outward to separate the sealed, sterile package. Peel in a downward motion. Note that your hands do not touch the inside of the wrapper.



Important Steps	Key Points
3. Place the package on a flat surface, or	The inside area of the wrapper is sterile and may be used as a sterile field until the contents are used.
	
4. Hand the article to a sterile person, or	Keep your fingers away from the edges. The sterile person then picks up the sterile item.
	
5. Lift the sterile item from the wrapper by using sterile forceps.	
	

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #82--USE PROPER HANDWASHING TECHNIQUE

I. Equipment needed

   A. Soap

      (NOTE: It is best to use a mechanical soap dispenser if available. If bar soap is used, be sure to rinse it thoroughly before returning it to the tray.)

   B. Paper towels

   C. Running water

   D. Hand brush, if needed

   E. Waste receptacle

II. Procedure

   A. Turn on water and regulate temperature

      1. When using foot controlled faucets, turn water on when needed

      2. When using hand controlled faucets, leave water running throughout procedure

      (NOTE: Sink and surrounding areas are contaminated so DO NOT TOUCH ANY PART.)

   B. Apply soap to cover entire area of hands and wrists

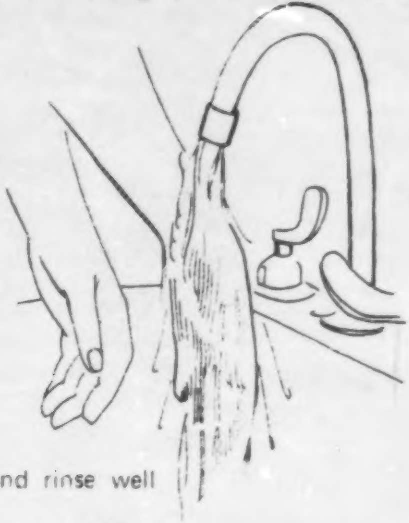
   C. Add water as necessary to keep lather moist

   D. Continue washing hands and use friction for thirty seconds to two minutes

   E. Use hand brush and clean nails, if needed

F. Rinse hands and wrists thoroughly with water flow directed from wrists down to fingers

FIGURE 1

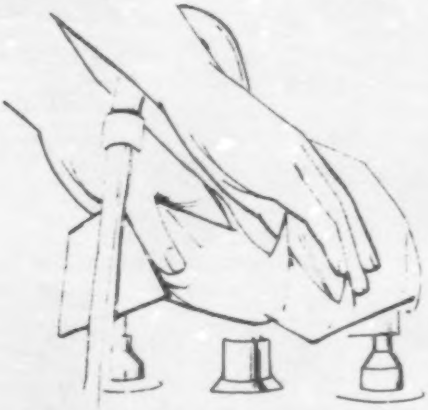


G. Soap hands again and rinse well

H. Dry hands well with a different paper towel and discard it.

I. Turn off faucets with a different paper towel, if hand controlled.

FIGURE 2



J. Discard towel in proper waste receptacle

Above illustrations used by permission of W.B. Saunders Co., from Modern Bedside Nursing by Vivian M. Culver, 7th edition, copyright 1969, pp. 787-788.

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #83--TURN THE PATIENT ON SIDE

I. Tools and equipment required

   A. Robe

   B. Cover

II. Procedures

   A. Lower the siderails and stand close to the bed on the side where you will move the patient.

   B. Move the patient's shoulders toward you.

   C. Move the patient's hips toward you.

   D. Have the patient flex the knees or cross one ankle over the other.

   E. Place the patient's arm closest to you across chest and the other arm along the side of the patient's head.

   F. Roll the patient to the side.

   G. Position the pillow to patient's back and between patient's knees.

HEALTH CARE PROCEDURES
UNIT XVI

JOB SHEET #84--ASSIST PATIENT INTO A WHEELCHAIR

I. Tools and equipment required

A. Bathrobe

B. 2 bath blankets

C. Wheelchair

D. Foot stool

E. Pillow

F. Slippers

II. Procedures

A. Greet patient and explain procedure.

B. Screen the unit.

C. Cover the wheelchair with a bath blanket. Elevate foot pedals before placing patient in wheelchair.

D. Place wheelchair near head of bed facing the foot of the bed. Lock chair.

E. Lock bed.

F. Fanfold top bedclothes to foot of bed.

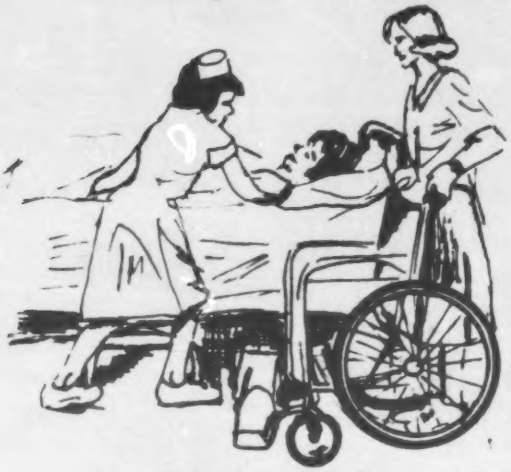
G. Elevate head of bed.

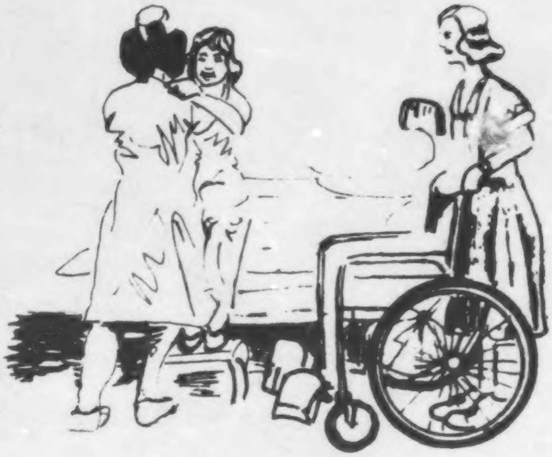
H. Dress patient in robe and put on slippers.

I. Place footstool at side of bed.

J. Assist patient to dangle.

K. Face patient and have him/her steady foot stool with foot. Have patient place feet on center of stool and place hands on attendant's shoulder. Attendant will place hands on rib cage of patient, under axillae, raise patient slightly, and help him/her to slide off edge of bed gradually to a standing position on the stool. Then have him/her step to the floor.

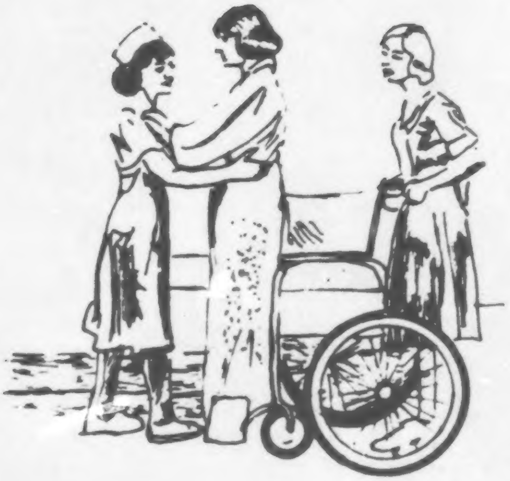


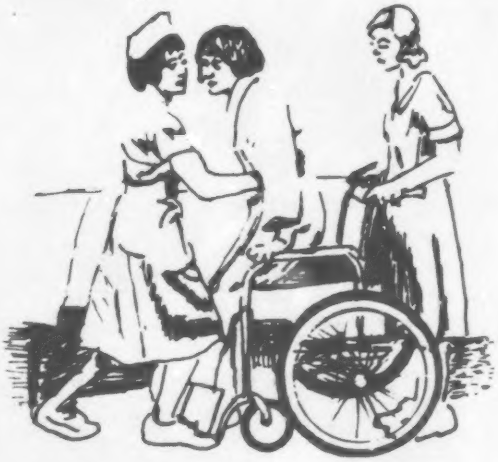


L. Keeping hands in the same position, help patient to turn slowly until the back is toward the wheelchair.

M. Have another attendant hold chair, lower patient gradually to sitting position in wheelchair. Arrange robe smoothly. Place feet on foot rest. Adjust foot rest.

N. Ask patient to place hands on arms of wheelchair for support as she/he is lowered into the chair.





O. Cover patient with bath blanket. Lower foot pedals.

P. Check patient's pulse.

Q. Teach patient to unlock and propel wheelchair.

R. Leave drinking water within reach of the patient.

S. Observe patient while sitting.

T. Make sure bed and unit are orderly.

U. Return patient to bed after prescribed period or sooner if necessary.

V. Replace equipment according to institution's policy.

HEALTH CARE PROCEDURES
UNIT XVI

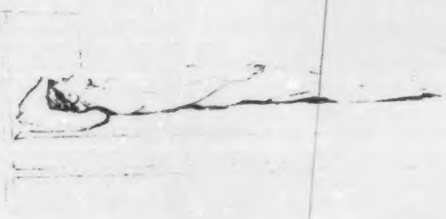
JOB SHEET #85- SIT PATIENT UP IN BED

I. Procedure to Place Patient in Supine Position

Important Steps	Key Points
A. Approach and identify the patient, explain what you are going to do, and enlist his/her cooperation.	The patient may be frightened by what has happened to her/him as well as depressed or emotionally upset. You will have to reassure the patient of your ability to help her/him move. Explain the need to change position frequently for his/her health and comfort. Wash your hands.
B. Position the bed.	Place the bed in a flat or level position at working height, unless contraindicated. Common contraindications for bed position change may be patients with severe cardiac (heart) or respiratory (lung) diseases or subarachnoid hemorrhage or patients in some type of traction or cast which precludes changing the bed position. Be sure to obtain this information from your nurse when you receive your assignment, or refer to the patient's nursing care plan in the Kardex. Lower the siderails on the proximal side, if they are used. The proximal side should be the side on which the patient is paralyzed. It requires the most support from you, and working near it reduces the distance you need to stretch or reach.
C. Place the patient on his/her back.	Use smooth, coordinated movements with good alignment of your body to prevent strain or possible injury. Avoid sliding the patient on the bedding; this causes friction and a possible sheet burn. If patient is on his/her side remove any supportive pillows, fold top bedding back to hips, and avoid any undue exposure of the patient's body which may embarrass him/her or others. With one hand on patient's shoulder and one on hip, roll the body in one piece (like a log) over onto patient's back. Always avoid twisting the back by moving the torso (trunk) of the body as a unit.

	Important Steps	Key Points
D.	Align the patient's body in good position.	The head, neck, and spine should be in a straight line. The arms and legs should be parallel to the body. The hips, knees, and feet should be in good alignment.
E.	Support the body parts in good alignment for comfort	Place a pillow under the head and shoulders to prevent strain on neck muscles. Support the small of the back with a folded bathtowel or small pillow. Since this patient is paralyzed on the right side, he/she will be unable to keep the right leg in good position. You should put a footboard at the foot of the bed and place the patient so that his/her feet are flat against it. A sandbag is placed along the outer portion of the right foot to keep the foot upright. Now make a trochanter roll and arrange it along the right hip and thigh to keep the hip joint from rotating outward. Place a pillow under the right forearm so that the arm is at least six inches from the body and place a hand-roll in the paralyze right hand. Use the loops of a slightly loose bandage to keep the fingers flexed and the thumb in opposition on the roll; otherwise the roll will slip out of place.
F.	Use aids to reduce pressure on bony prominences, if indicated by the condition of the patient.	The paralyzed patient may not be aware of any discomfort caused by pressure, so you must be alert to prevent and reduce pressure, especially on any paralyzed parts. Place a synthetic lamb's wool pad under the patient's hips and thighs. With one hand on shoulder and one hand on distal hip, roll the patient toward you, continue to support the shoulder and chest with one hand, and place the pad along hips and thigh with one half of the pad tucked close to side and bed. Roll patient onto his/her back, reach under th proximal side, and pull remainder of the pad into place. Be sure to repositio the patient's body parts. Place a piece of foam rubber padding under the patie right heel, or use a protective heel of synthetic lamb's wool.

Important Steps	Key Points
G. Provide for the patient's comfort.	Adjust the top bedding, leave call bell where the patient can reach it with his/her unaffected hand, and raise the siderails. Plan to change patient's position at least every two hours, or oftener. Tell the patient when you expect to return.
H. Report and record, as appropriate.	Report to the team leader or the nurse in charge that the patient has been positioned. Report and record any change in the patient's condition, such as reddened areas of the skin over bony prominences, decreased movement in joints, pain on movement, difficulty in breathing or swallowing, etc. Charting example: 10:00 A.M. Patient returned to supine position; no reddened areas observed on back; moves easily without pain or dyspnea. J. Jones, LVN.



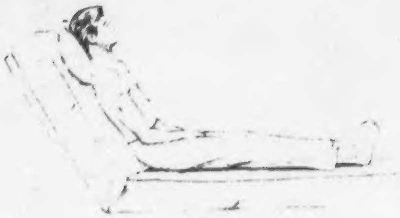
Supine position

II. Procedure to Place Patient in Fowler's Position

Now that you have positioned the patient in a supine position, you should practice placing the patient in variations of that position. Therefore, given a patient with paralysis of his/her right side who is in a supine position in bed, place him/her in a Fowler's position.

Important Steps	Key Points
A. Approach and identify the patient, explain what you plan to do, and enlist his cooperation.	Whether the bed is an electrically operated or a manual Gatch-type, explain that you will raise the head of the bed slowly and ask him/her to tell you when to stop if he/she becomes uncomfortable. Wash your hands.
B. Elevate the head of the bed.	Slowly raise the head of the bed. Ordinarily, the head of the bed would be elevated between 15° and 60° (usually about 45°) and would not be brought to the full upright position for any helpless patient because he/she may be unable to maintain his/her balance in the upright sitting position and would slip or fall.
C. Place the patient in good body alignment.	See that the head, neck, and back are straight. The weight of the body should be supported at the point where the hips are flexed in the sitting position. See that the feet are straight and the toes are pointing in an upright position.
D. Support the body parts in good alignment for comfort.	The body parts should be supported in Fowler's position as they were in the supine position. Place the pillow under the head and shoulders, the trochanter roll along the right hip and thigh, the footboard at the foot of the bed, a sandbag along the outer part of the right foot, and a pillow under the right forearm to reduce the pulling drag on the shoulder joint. The hand and thumb should be supported on the handroll.

Important Steps	Key Points
E. Use aids to reduce pressure on bony prominences, if indicated by condition of the patient.	You should prevent or reduce pressure as you do for the supine position by use of a synthetic lamb's wool pad or foam rubber pad under the hips, and a protective heel or pad on the right foot.
F. Provide for the patient's comfort.	Adjust the top bedding, raise siderails, and arrange personal articles the patient may want, such as drinking water or call bell, close at hand so they can be reached easily. Plan to change his/her position in two hours or less, to prevent prolonged flexion of the hips. Tell the patient when you expect to return.
G. Record and report, as appropriate.	Be sure to notify other team members involved in the care of the patient about the time schedule for changing the patient's position. Charting example: 12:10 P.M. Patient's position changed to Fowler's. Is in good spirits today, moving easily, without pain. J. Jones, LVN

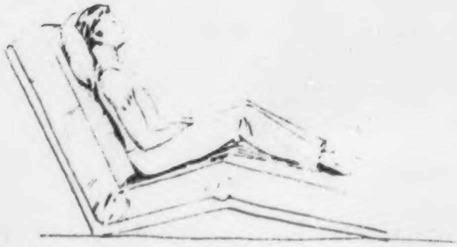


Fowler's position

III. Procedure to Place Patient in Semi-Fowler's Position

Given the same patient who has paralysis of the right side and who is lying in a supine position in bed, place in a semi-Fowler's position. Follow the same procedure as outlined in Item 11, except that you will add the following as part of Step two.

Important Steps	Key Points
A. Elevate the knee rest of the bed.	Slight flexion of the knees provides more comfort for the patient by reducing strain on abdominal muscles and helps him/her maintain a sitting position without sliding down in the bed. It also prevents hyperextension of the knees. Charting example: 12:10 P.M. Placed in semi-Fowler's position. Patient says this is the most comfortable position. J. Jones, LVN



Semi-Fowler's position.

THROMBO

CARDI

VENA

HEM

CEREBRO

PHLEB

33

1234

example: cardiorrhaphy

cardi--heart

rhaphy--suture

suture of heart muscle

example: hemolysis

hem--blood

lysis--dissolution

dissolving of red blood cells

example: phlebotomy

phleb--vein

otomy--incision

drawing of blood from a vein

example: thrombosis

thrombo--clot

osis--condition

formation of a blood clot

example: venotomy

vena--vein

otomy--incision

incision into a vein

example: cerebromalacia

cerebro--brain

malacia--softening

softening of the brain

PSYCHO

PYO

RADI

LIP

LITH

PSORA

example: lipoma

lip--fat

oma--tumor

fatty tumor

example: lithotomy

lith--stone

otomy--incision

removal of stone by incision

example: psoriasis

psora--itch

iasis--condition

dermatitis, itching skin condition

example: psychiatry

psycho--mind

iatric--medical treatment

branch of medicine which deals with diagnosis and treatment of diseases of the mind

example: pyogenic

pyo--pus

genic--orgin

pus producing

example: radiology

radi--ray

ology--study of

branch of medicine concerned with use of radioactive substances

PYELO

REN

PNEUMON

SALPING

CYSTO

NEPHRO

example: salpingitis

salping--tube

itis--inflammation of

inflammation of tube

example: cystitis

cysto--bladder

itis--inflammation

inflammation of the bladder

example: nephrectomy

nephro--kidney

ectomy--excision

surgical removal of a kidney

---

example: pyelitis

pyelo--pelvis

itis--inflammation of

inflammation of the pelvis of the kidney

example: reniform

ren--kidney

form--shape

kidney-shaped

example: pneumonectomy

pneumon--lung

ectomy--excision

surgical removal of a lung

CON

CONTRA

DE

1245

BI

BRADY

CIRCUM

1246

example: bilateral
bi--both
latus--side
pertaining to two sides of the body

example: bradycardia
brady--slow
cardio--heart
slow heart action

example: circumrenal
circum--around
renal--kidney
around the kidney

example: concentric
con--together
centric--center
having a common center

example: contraception
contra--against
conception--conceiving
prevention of conceiving

example: decaput
de--away from
caput--head
separation of head from body

CSF	**BUN**
hb	**CBC**
hct	**C and A**

blood urea nitrogen

complete blood count

Clinitest and Acetest

cerebrospinal fluid

hemoglobin

hematocrit

ER	**CCU**
ICU	**CS**
IT 253	**EENT** 1074

cardiac care unit

central supply

eye, ear, nose, and throat

emergency room

intensive care unit

inhalation therapy

p.c.

O.U.

P. O.

oz.

p.r.n.

P

oth eyes	after meals
unce	by mouth
ulse	as needed

q.i.d.

q.d.

q.o.d.

q.h.

QNS

q.2h.

every day

every hour

every 2 hours

four times a day

every other day

quantity not sufficient

ERYTHRO

LEUCO

LUTEUS

1260

CHLOROS

CIRRHOS

CYANO

1261

example: chloroma
chloros--green
oma--tumor
"green tumor"

example: cirrhosis
cirrhos--orange yellow
osis--condition
"yellow condition" liver disease

example: cyanosis
cyano--blue
osis--condition
"blue condition"--bluish skin color due to lack of oxygen

example: erythrocyte
erythro--red
cytos--cell
red blood cells

example: leucocyte
leuco--white
cytos--cell
white blood cell

example: corpus luteum
corpus--body
luteus--yellow
yellow body of ovary

FBS	**ur**
NPN	**V. O.**
RBC	**wt**

ne

bal order

ght

fasting blood sugar

non protein nitrogen

red blood count

METR

OOPHORO

ORCHIDO

CERVI

HYSTER

MAMMA

example: cervicectomy

cervi--neck

ectomy--excision

surgical removal of uterine cervix

example: hysterectomy

hyster--uterus

ectomy--excision

surgical removal of uterus

example: mammalgia

mamma--breast

algia--pain

breast pain

example: metrectomy

metr--uterus

ectomy--excision

surgical removal of uterus

example: oophoritis

oophoro--ovary

itis--inflammation of

inflammation of the ovary

example: orchidoptosis

orchido--testicle

ptosis--falling

dropping of testicle

MYEL

DACTYL

MYO

ILI

OSTEO

MANUS

1268

1269

example: dactylitis

dactyl--finger

itis--inflammation

inflammation of finger

example: iliosacral

ili--ilium

sacral--sacrum

pertaining to region of junction of ilium and sacrum

example: manicure

manus--hand

cura--care

care of the hands

---

example: myelomo

myel--marrow

oma--tumor

tumor originating in bone marrow

example: myoedema

myo--muscle

edema--swelling

swelling of a muscle

example: osteoplasty

osteo--bone

plasty--surgical correction

surgical correction or repair of a bone

CHONDR

COSTA

CRANIO

TRICHO

VISCER

CARPO

xample: hair
richo---hair
id--like
airlike

xample: visceromegaly
iscer --body organ
egaly--enlargement
nlargement of abdominal body organs

xample: carpectomy
arpo--wrist
ctomy--excision
xcision of the wrist

example: chondromalacia
chondr --cartilage
malacia--softening
softening of cartilage

example: costa
costa--rib
algia--pain
pain in a rib

example: craniotomy
cranio--skull
otomy--incision
incision through the skull

OPHTHALM

OTO

RHIN

1275

ENCEPHALO

MENINGO

NEURO

1276

example: encephalitis

encephalo--brain

itis--inflammation

inflammation of the brain

example: meningitis

meningo--membrane

itis--inflammation

inflammation of the membrane of the brain and spinal cord

example: neurology

neuro--nerve

ology--study of

branch of medicine dealing with nervous system and its diseases

example: ophthalmology

ophthalm--eye

ology--study of

branch of medicine dealing with diagnosis and treatment of eye diseases

example: otitis

oto--ear

itis--inflammation

inflammation of the ear

example: rhinoplasty

rhin--nose

plasty--surgical correction of,
plastic repair of

plastic surgery of the nose

MAST

1279

breast

Example: mastectomy

mast--breast

ectomy--excision

surgical removal of breast

ECTASIS	URO
ECTOMY	ALGIA
FORM 1281	DESIS 1282

example: urology

uro--urine

ology--study of

study of urine (branch of medicine concerned with diseases of urinary system)

example: bronchiectasis

bronchi

ectasis--dilation

dilation of bronchi

example: neuralgia

neuro--nerve

algia--pain

pain along course of a nerve

example: appendectomy

appendix

ectomy--excision

surgical removal of appendix

example: arthrodesis

arthro--joint

desis--fixation

surgical fixation of a joint

example: linguaform

lingua--tongue

form--shape

tongue-shaped

CYTO	**ADENO**
GLYCO	**CALCULUS**
LINGUA 1284	**CUTIS** 1285

xample: adenoma

deno--gland

ma--tumor

umor of a gland

xample: calculosis

alculus--stone

sis--condition

resence of a stone

xample: cutitis

utis--skin

tis--inflammation

nflammation of the skin

example: cytology

cyto--cell

ology--study of

study of cells

example: glycosuria

glyco--sweet

uria--urine

presence of sugar in urine

example: linguiform

lingua--tongue

form--shape

tongue-shaped

PYLORO

ILE

STOMA

LAPARO

ANGIO

PROCTO

xample: ileitis

le--ileum

tis--inflammation

nflammation of the ileum

xample: laparotomy

aparo--abdomen

tomy--incision

ncision of the abdomen

xample: proctology

rocto--anus

logy--study of

hase of medicine that deals with treatment
f diseases of colon, rectum, and anus

example: pylorotomy

pyloro--gatekepper

otomy--incision

incision into the pylorus

example: stomatitis

stoma--mouth

itis--inflammation of

inflammation of the mouth

example: angioma

angio--vessel

oma--tumor

tumor of a blood vessel

ENDO	DYS
EPI	EC
EX	ECTO

ample: dysentery

s--painful

teron--intestine

flammation of intestine with pain

ample: ectomy

--out

my--excision

cision of any organ or gland

ample: ectoparasite

to--outside

rasitos--parasite

rasite on outside of body

example: endoparasite

endo--in, within

parasitos--parasite

parasite inside of body

example: epidermis

epi--over

dermis--skin

external layer of skin

example: exit

exit--way out

the way out

RHODO

MELANO

XANTHO

POLIO

1292

PORPHYRO

1293

example: melanouria

melano--black

uria--urine

dark pigment in urine

example: poliosis

polio--gray

osis--condition

gray hair

example: porphyuria

porphyro--purple

uria--urine

excretion of unusual quantity of porphyrin

example: rhodopsin

rhodo--red

opsis--vision

visual purple

example: xanthoderma

xantho--yellow

derm--skin

yellowness of skin

syr.

T

tere bene

SSE

$\overline{ss}$

STAT

soap suds enema

half

immediately

syrup

temperature

rub well

Rx	**QS**
sig	**R**
S.O.S.	**R**

antity sufficient

spiration

ctum

prescription (recipe)

write (let it be labeled)

if necessary

OR	**Lab**
PEDI	**MICU**
PT 1300	**OB**

boratory

dical intensive care unit

stetrics

operating room

pediatrics

physical therapy

AMBI

ANTE

ANTI

1393

PULMO

AB

A

1393

example: pulmonectomy
pulmo--lung
ectomy--excision
surgical removal of a lung

example: abnormal
ab--away from
norma--rule
away from the rule

example: apnea
a--without
pnea--breath
without breath

example: ambidextrous
ambi--both
dexter--skillful
uses both hands with equal ease

example: antepartum
ante--before
partum--labor
before labor begins

example: antisepsis
anti--against
sepsis--infection
prevention of growth of bacteria

ENTERO

GASTR

HEPAT

1396

PEDI

SPONDYL

CHOL

1397

example: pedicure

pedi--foot

cura--care

care of the feet

example: spondylitis

spondyl--vertebra

itis--inflammation

inflammation of vertebra

example: cholecystitis

chol--bile

cysto--bladder

itis--inflammation

inflammation of gall bladder

example: enteritis

entero--intestine

itis--inflammation

inflammation of the intestine

example: gastroplasty

gastr--stomach

plasty--surgical correction

plastic surgery on the stomach

example: hepatoma

hepat--liver

oma--tumor

tumor of the liver

PATH

PEXY

PHOBIA

1399

OMA

OTOMY

OSIS

1310

example: lipoma
lip--fat
oma--tumor
fatty tumor

example: osteotomy
osteo--bone
otomy--incision
cutting through a bone

example: dermatosis
derma--skin
osis--condition of
diseased condition of the skin

example: otopathy
oto--ear
path--disease
disease of the ear

example: mastopexy
masto--breast
pexy--fixation
fixation of a breast

example: ailurophobia
ailuros--cat
phobia--fear of
fear of cats

M. T.	**D. O.**
N. A.	**L. P. N.**
P. T.	**M. D.**

1312

Doctor of Osteopathy

Licensed Practical Nurse
sometimes called a Licensed
Vocational Nurse LPN

Medical Doctor

Medical Technologist

Nurse Aide

Physical Therapist

b.i.d.

b.i.n.

BM

A.M.

amt

ax

morning

amount

axillary

twice daily

twice a night

bowel movement

$\overline{aa}$	sp g
a.c.	ua
ad lib	WBC

pecific gravity	of each
rinalysis	before meals
hite blood count	as desired

cal	BP
cc	BRP
cm	C.

1318

blood pressure

bathroom privilege

Celsius (centigrade)

calorie

cubic centimeter

centimeter

elix	CNS
F.	c.v.
gm	DPT

entral nervous system

elixir

omorrow night

Fahrenheit

iphtheria, pertussis, tetanus

gram

h.s.

gtt

kg.

h

L

h.n.

rop

our

onight

at bedtime

kilogram

liter

RHEXIS

STOMA

ALBUS

PLASTY

PTOSIS

RHAPHY

example: rhinoplasty

rhino--nose

plasty--plastic repair

plastic surgery of the nose

example: orchidoptosis

orchido--testicle

ptosis--falling

dropping of testicle

example: nephrorrhaphy

nephron--kidney

rhaphy--suture

surgical procedure of suturing the kidney

---

example: angiorrhexis

angio--vessel

rhexis--rupture

rupture of a blood vessel

example: colostomy

colo--colon

stoma--mouth

more or less permanent opening of the colon to the exterior

example: albinuria

albus--white

uris--urine

"white-urine",colorless urine

MEGALY

OID

OLOGY

1323

IASIS

ITIS

MALACIA

1323

example: lithiasis

lithos--stone

iasis--formation

formation of stone

example: otitis

oto--ear

itis--inflammation

inflammation of the ear

example: osteomalacia

osteo--bone

malacia--softening

softening of bone

example: enteromegaly

enteron--intestine

megaly--enlargement

abnormal enlargement of the intestine

example: trichoid

tricho--hair

oid--like

hairlike

example: cardiology

cardio--heart

ology--study of

diagnosis and treatment of diseases of the heart

t.i.d.

t.i.n.

T.O.

TPR

tr.

ung.

ree times daily

ree times a night

lephone order

vital signs

tincture

ointment

mm	R. I. T.
ml	R. N.
n.b.	m

Registered Inhalation Therapist

Registered Nurse

minim

milliliter

millimeter

note well

PRO

PERI

RETRO

POST

SEMI

PRE

example: pericardium

peri--around

cardio--heart

membrane around the heart

example: postocular

post--behind

oculus--eye

behind the eye

example: preoperative

pre--before

operatus--operation

preceding an operation

example: prootic

pro--in front of

oto--ear

in front of the ear

example: retroversion

retro--backward

versio--turning

being turned backward, as the uterus

example: semilunar

semi--half

luna--moon

half-moon shaped (as semilunar valves of heart)

TRANS

SUPRA

TRI

SYM

ULTRA

TACHY

example: suprarenal

supra--above

rena--kidney

above the kidney

example: symbiosis

sym--together

bios--life

living together

example: tachycardia

tachy--swift

cardia--heart

rapid heart beat

example: transfusion

trans--across

fusio--pouring

pouring across (transfer of blood from one person to another)

example: tricuspid

tri--three

cuspis--point

having three points (heart valve)

example: ultrasonic

ultra--beyond

sonus--sound

beyond sound (inaudible to human ear)

INTER

INTRA

PARA

EXO

HYPER

HYPO

example: exophthalmia
exo--out
ophthalmia--eye
abnormal protrusion of eyes

example: hyperacidity
hyper--excessive
acidus--acid (sour)
excessive acid (in stomach)

example: hypoacidity
hypo--under
acidus--acid (sour)
lack of acid (in stomach)

example: intercostal
inter--between
costa--rib
between the ribs

example: intradermal
intra--within
derma--skin
within the skin

example: parathyroid
para--beside
thyreos--shield (thyroid)
beside thyroid (small endocrine glands located close to thyroid)

OOB	**noct**
O. L.	**NPO**
O. S.	**O. D.**

1347

ght

out of bed

thing by mouth

left eye

ight eye

left eye